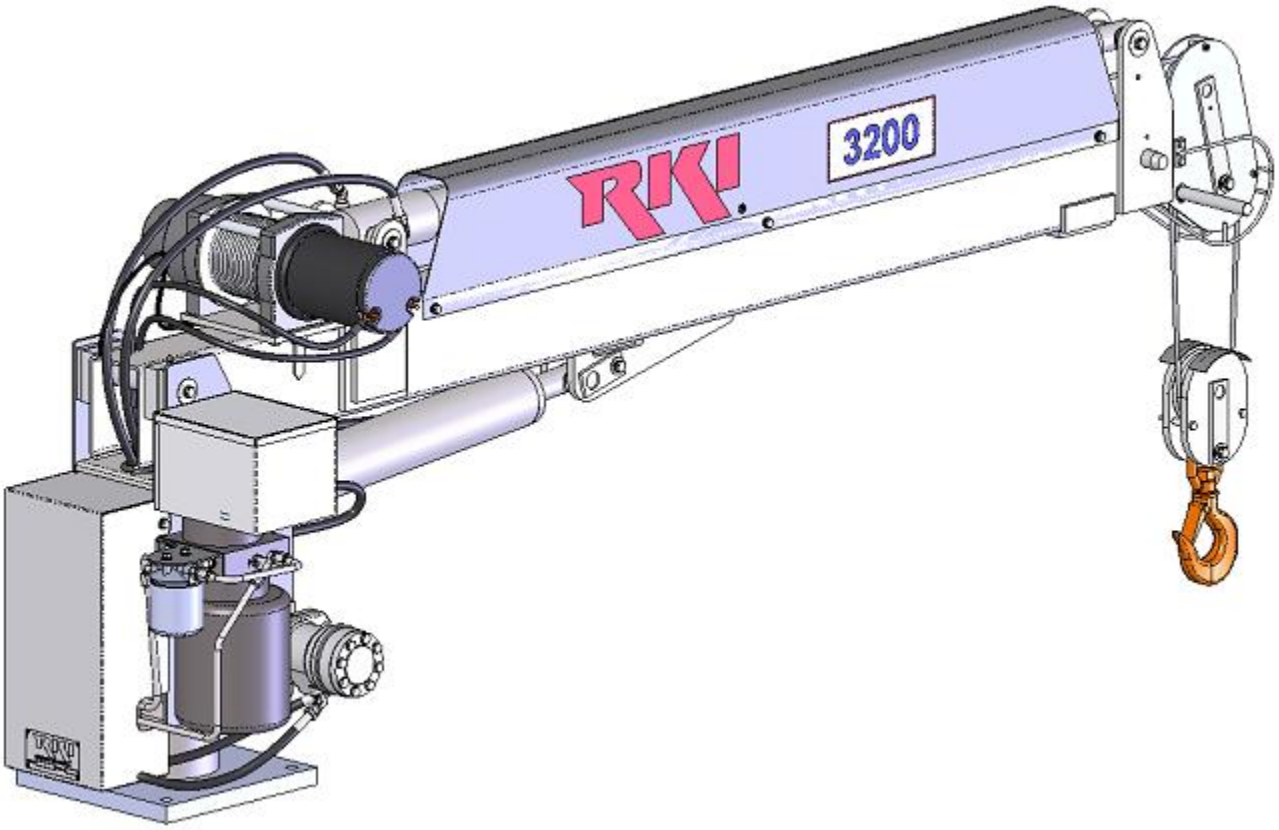
3200 SERIES CRANES

Models: 3200-3ER15, 3200-3ERX15

USER MANUAL

Effective Serial Numbers: 5195 and beyond



Serial Number: _____

Date: _____

RKI, Inc.

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PACKING LIST

The following items are included with your RKI 3200 Series crane:

1 – Crane Assembly

1 – Crane User Manual (W0053)

1 – Carton with Mounting Kit (43746), including the following contents:

1 – "Hot" Quill Power Cable (45157): 12in #2ga Wire Assembly from Master Switch to Crane Quill

1 – "Hot" Battery Power Cable (45158): 25ft #2ga Wire Assembly from Vehicle Battery to Master Switch

1 –Master Cutoff Switch (45156)

1 –Master Cutoff Switch Bracket (45155)

1 –Ground Cable (43738): 3ft #2ga Wire Assembly from Service Body to Vehicle Frame

6 –Cable Retaining Clips (43512)

4 –Mounting Bolts (43739): 5/8-11 x 3" Grade 8

8 –Flat Washers (07892): 5/8"

4 –Lock Washers (03032): 5/8"

4 –Hex Nuts (43740): 5/8-11 Grade 8

1 – Remote Control:

- ER models (44671): 18ft with Emergency Stop
- ERX models (44451): 18ft with Emergency Stop

IMPORTANT NOTICE

RKI, Inc. cannot possibly know or even anticipate all of the varied uses and applications that may be found for its crane products. For that reason, the company expressly disclaims any and all responsibility for the manner and methods used by the installer of these products. The company recommends that the installer of its crane products follow sound engineering principles and comply fully with each and every applicable ANSI, OSHA or other safety standard.

Safety Warning: RKI, Inc. cranes are not intended to be used, or incorporated as a component of any other equipment which may be used for the lifting or moving of people. Any such use is absolutely and categorically contrary to RKI, Inc.'s recommendation.

INTRODUCTION:

RKI cranes are designed and manufactured to provide you years of safe, dependable performance.

This manual has been provided to give you specific information regarding the safe operation and upkeep of your crane.

It is very important that all who operate or service the crane should begin by thoroughly reading this manual. In addition, the supervisor, and others concerned with the operation of the crane, should read this manual. Remember that an uninformed or careless operator can make the operation of any equipment dangerous.

The information in this manual helps to insure that your RKI crane is installed properly and operated safely. However it is not a definitive guide to every possible situation or circumstance. If you have any questions or require additional information, please contact RKI.

SPECIFICATIONS

Models:

3200-3ER15 3200-3ERX15

Moment Rating:

10,000 ft. lbs

Lift Capacities:

3,200 lbs. @ 3 ft.
2,000 lbs. @ 5 ft.
1,429 lbs. @ 7 ft.
1,111 lbs. @ 9 ft.
909 lbs. @ 11 ft.
769 lbs. @ 13 ft.
667 lbs. @ 15 ft.

Boom:

The boom angle varies from -5° to +75°.
1st stage telescoping boom extension ranges from 7' to 11' (Manual on ER model, Power on ERX model).
2nd stage telescoping boom extension ranges from 11' to 15' (Manual on both models).

Line Speed: Approximately 7 feet per minute (first rope layer, double line).

Multi-Functions: The crane configuration allows multiple electric and hydraulic functions to be performed simultaneously, however, multiple hydraulic functions are limited.

Load Sensor:

A load sensor is standard to automatically protect overload.

Anti Two-Block:

Per OSHA 29 CFR Part 1926.1416(d)(3), An anti two-block feature is incorporated into the crane to prevent damage from contact between the travel block and the boom tip.

Winch Cable and Block:

62ft of 1/4" galvanized aircraft cable is supplied with traveling block for double line operation.

Electrical:

12 VDC required to operate the electrical solenoid valves control all the hydraulic functions and the contactor for the hoist winch.

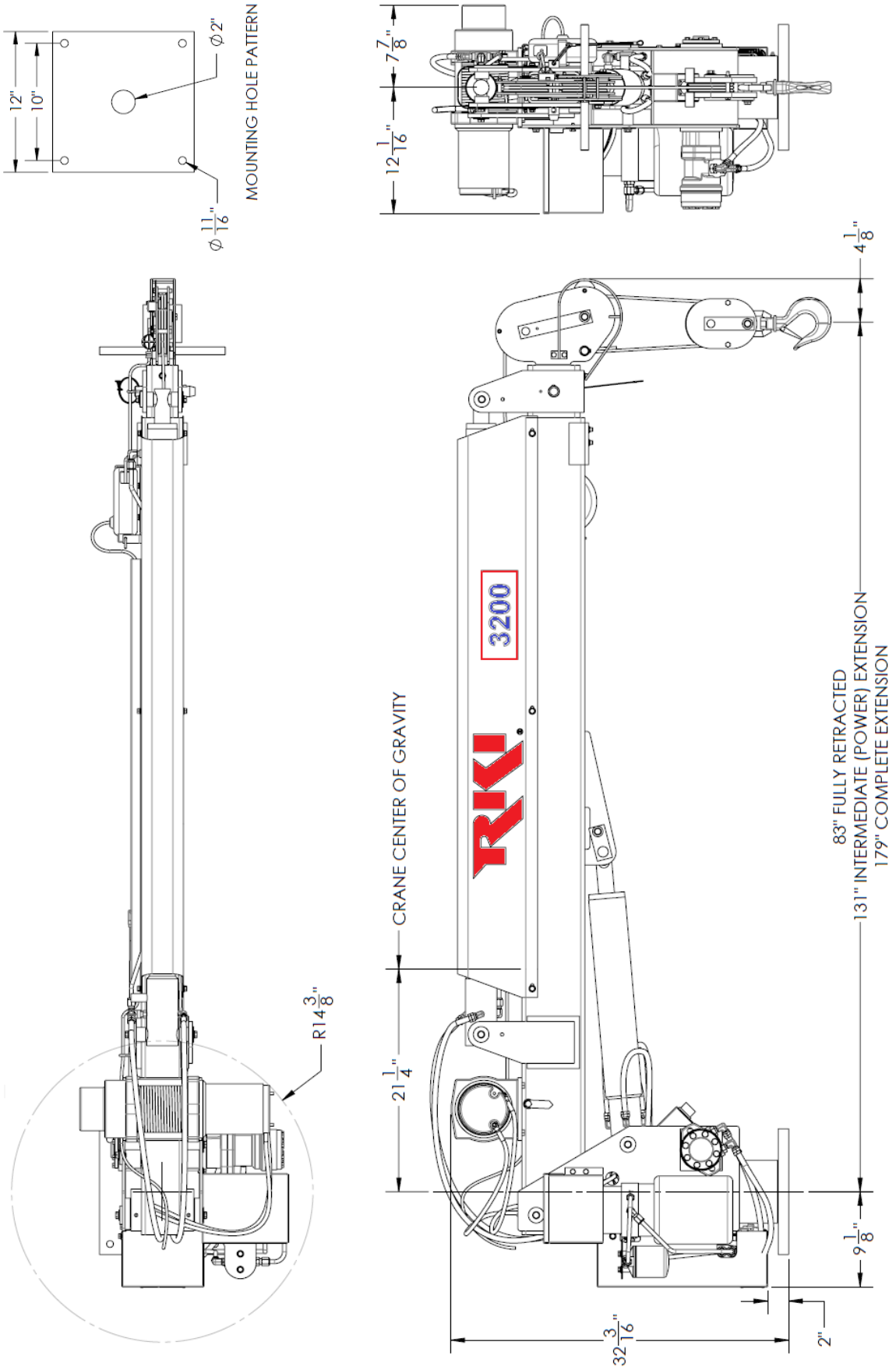
Safety Standards:

Meets OSHA 1910.180 requirements.

Specifications:

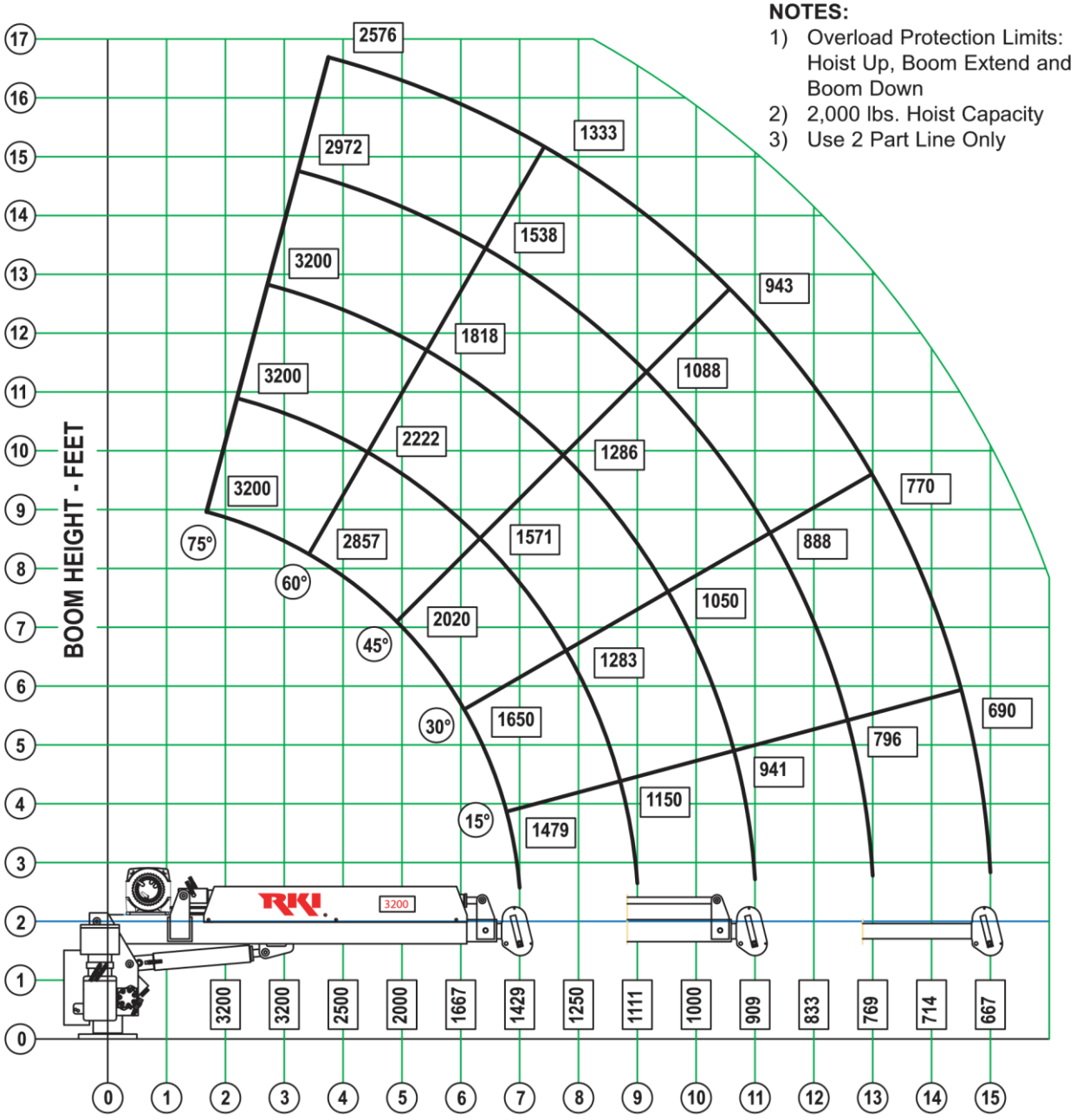
- Weights: 710 lbs. (ERX model)
  571 lbs. (ER model)
- Length: 12' 1"
- Width: 1' 9"
- Height: 2' 10-1/2"
- Base Plate Dimensions: 12" x 12"
- Truck Requirements: 10,000 lbs. GVWR (Minimum)
- Jack Leg: p/n JKL1 or equivalent (sold separately)

OVERALL DIMENSIONS



3200 SERIES CAPACITY CHART

NOTES:
1) Overload Protection Limits: Hoist Up, Boom Extend and Boom Down
2) 2,000 lbs. Hoist Capacity
3) Use 2 Part Line Only



INSTALLATION INSTRUCTIONS

1. Vehicle should meet minimum GVW rating of 10,000 lbs.
2. The crane mounting base must be capable of safely supporting the crane assembly and its maximum capacity of 10,000 ft-lbs loading. The support structure for the mounting base must be tied directly to the main frame members of the vehicle.
3. The vehicle must be equipped with jacklegs extending out at least 42” from the centerline of vehicle.
4. Disconnect the ground cable from the vehicle’s battery(ies).
5. Drill 4 holes (11/16” diameter) and a center hole (2” diameter), centered on the crane mounting location.
6. Install crane boom support in place and adjust to its lowest position. To prevent damage, do not support the crane under the hydraulic cylinders, support the crane’s main boom directly.
7. Grind both the crane lower mounting base and the service body’s top mounting plate, removing any paint, primer, or sealants. The crane is electrically grounded through the base plate, thus it is important that there is a good metal-to-metal contact between the crane and the mounting location.
8. Lift crane in place and install Grade 8 mounting bolts with nuts and washers. **Note: use only bolts, nuts, and washers provided with crane.** Do not substitute and do not reuse bolts that have been previously torqued.
9. Install master cutoff switch bracket. Line up bracket with the two rear bolts so that the bracket is along the far side of the crane compartment. Install the master cutoff switch to the bracket and set to “OFF” position.
10. Tighten Grade 8 bolts in a criss-cross pattern, alternating until all are torqued to 200 ft-lbs (dry bolt).
11. If crane is being installed on a service or utility body, seal around all holes and bolts with silicone or equivalent sealer. Also seal around crane mounting plate.
12. Adjust the boom support to contact with the main boom and secure the crane hook to the hook ring.
13. Attach the 12” power cord between the crane’s quill to either terminal of the master cutoff switch. Connect the 25ft power cord to the other terminal of the master cutoff switch then route the cord along the vehicle’s frame rail to the vehicle’s battery. Care must be taken so that the power cable is not positioned against burrs, sharp edges or anything that would chafe or cut the cable insulation. The cable should be supported at intervals to prevent sagging or dragging. Use rubber grommets when cable passes through bulkheads.
14. Cut cable to the minimum required length and connect it to the positive post of the vehicle’s battery with the appropriate lug or clamp connection.
15. Use the supplied 3ft ground cable to ground the crane base, mounting base, or service body to the truck chassis. Use rubber grommets where the cable passes through bulkheads.
16. If the vehicle’s negative ground cable is grounded only to the vehicle’s engine, then install a second ground cable from the negative post of the battery to the vehicle’s frame.
17. The vehicle should be equipped with a minimum 125-amp alternator, but a larger capacity is highly recommended. Note: alternator performance is significantly affected by vehicle RPM and temperature. At standard truck idle speeds, the alternator output can be as low as half of rated capacity.
18. The vehicle should be running during crane operation, and it is recommended that it run at an elevated idle.
19. A 150-amp circuit breaker is required for all crane installations (not included).

BATTERY

Adequate battery power is a necessity for satisfactory crane operation. Most original equipment vehicle batteries are designed for relatively light service of vehicle operation.

On vehicles with longer distances between battery and crane, or if heavy or extended periods of operation are anticipated, a heavy duty battery may be installed in the vehicle, or a second 12 volt battery added to the vehicle system, in order to increase available amperage. The vehicle charging system should be functioning properly. The battery charging system should supply a minimum of 13 volts DC at the crane with the vehicle engine running. The voltage should not drop below 9 volts when any function of the crane is actuated.

It should also be noted that the performance of vehicle's alternators drops significantly with running idle speed and ambient temperature. At standard truck idle speeds, the alternator output can be as low as half of the rated capacity. So it is recommended that the vehicle be running at an elevated idle during crane operation.

Normal operation of the crane should not require a second battery. However, if a second battery is used, it should be connected to the first battery in parallel; positive post-to-post and negative post-to-post.

GROUNDING

Proper and adequate grounding of the crane is necessary to prevent poor performance or malfunction. The 3200 Series cranes are grounded through the bottom mounting plate. A good ground must be established between the crane's lower mounting base and the vehicle battery. For service or utility body mounting, this grounding typically goes through the service body mounting plate, to the service or utility body, and then to the vehicle frame. Ensure that a good metal-to-metal contact is made between the crane's lower base and the service body mounting plate. If the body is mounted to the truck on wood runners, or rubber mounts, a # 2 gauge ground cable must be added between the body and the chassis frame.

The vehicle battery, and second battery if used, must be grounded directly to the chassis frame. If the vehicle battery is grounded to the engine block, a second # 2 gauge minimum ground cable must be added from the battery to the chassis frame or the engine to the chassis frame. .

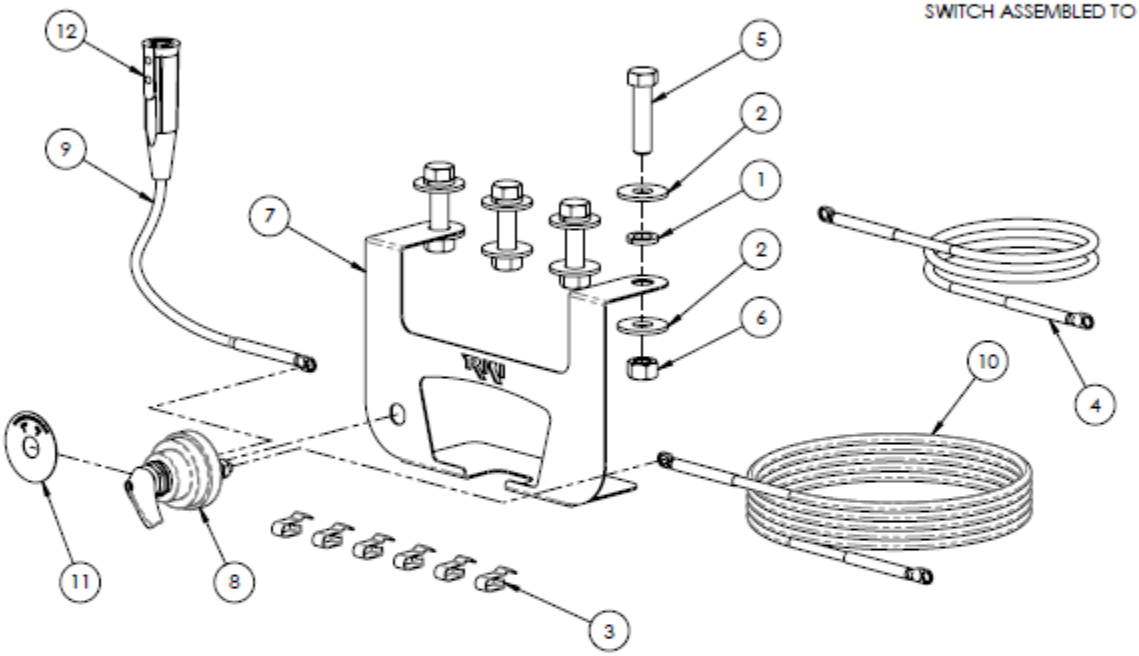
Maintain a regular schedule to ensure that the battery remains in good working condition. Clean all connections, check electrolyte levels, check for loose belts and make sure that your vehicle charging system is operating properly.

WARNING:

1. **FEDERAL LAW (49 CFR PART 571) REQUIRES THAT THE FINAL STAGE MANUFACTURER OF A VEHICLE CERTIFY THAT THE VEHICLE COMPLIES WITH ALL APPLICABLE REGULATIONS. ANY MODIFICATIONS OF THE VEHICLE PRIOR TO THE FINAL STAGE ARE ALSO CONSIDERED INTERMEDIATE STAGE MANUFACTURING AND MUST BE CERTIFIED AS TO COMPLIANCE. THE INSTALLER IS RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE FEDERAL AND STATE REGULATIONS AND REQUIRED TO CERTIFY THAT THE VEHICLE IS IN COMPLIANCE.**
2. **THE INSTALLER OF THE CRANE IS RESPONSIBLE TO COMPLY WITH THE OSHA TRUCK CRANE STABILITY REQUIREMENTS AS SPECIFIED BY 29 CFR PART 1910.180(c)(i).**

MOUNTING KIT (P/N 43746)

SWITCH ASSEMBLED TO BRACKET



Item Number	Part Number	Description	Qty
1	03032	WASHER-LOCK 5/8	4
2	07892	WASHER-FLT 5/8 W	8
3	43512	CLIP-BODY F/BATTERU CABL	6
4	43738	WIRE ASY-#02 36.0 GRND	1
5	43739	BOLT-HX 5/8-11X3 G8	4
6	43740	NUT-HX 5/8-11 G8	4
7	45155	BRACKET-3200 SWITCH MSTR	1
8	45156	SWITCH-MSTR CUTOFF	1
9	45157	WIRE ASY-PWR CRANE 12"	1
10	45158	WIRE ASY-PWR BATTERY 25'	1
11	45174	FACEPLATE-SWITCH MSTR	1
12	*43211	CONNECTOR-CABLE FEM SK	1

*INCLUDED IN CRANE POWER WIRE ASY

OPERATING INSTRUCTIONS (Page 1 of 3)

1. Do not operate this crane unless you have thoroughly read and understand the information in this manual.
2. Cranes shall be operated only by the following qualified personnel, and crane operator certification per OSHA 29 CFR Part 1926.1427-1430 is available from local and national certifiers:
    a. Designated persons
    b. Trainees under the direct supervision of a designated person
    c. Inspectors, maintenance and test personnel (when it is necessary in the performance of their duty)
3. No one other than the personnel specified in (2) above shall enter the crane's operating area, with the exception of persons such as supervisors, signal persons, and those specific persons authorized by supervisors who duties require them to do so, and then only in the performance of their duties and with the knowledge of the operator or other appointed persons.
4. The operator shall be familiar with the equipment and its proper care. If adjustments or repairs are necessary, the operator shall promptly report this to an appointed person, and notify the next operator.
5. The operator at the start of each shift shall test all controls. If any controls do not operate properly, they shall be adjusted or repaired before operations are begun.
6. Seek the best possible work site for the operation when parking the crane-mounted vehicle. The parking location should be firm, dry and level ground or pavement, which can adequately reach the load by the rated capacity of the crane.
7. The crane-mounted vehicle shall not be parked on uneven, rocky or muddy terrain, steep grades, or overhead-obstructed locations.
8. Fully extend the outriggers or jacklegs out at least 42" from the centerline of vehicle and to the ground to provide firm support and keep the crane-mounted vehicle as level as possible during the operation. When operating on soft terrain use wider pads or boards under the outrigger feet. Blocking under the outrigger feet shall be of sufficient strength to prevent crushing, bending, or shear failure.
9. After the vehicle has been properly positioned, engage the emergency brake and start the engine.
10. Vehicle should be running during all crane operations, and it is recommended that it run at an elevated idle.
11. Turn the master cutoff switch to the "ON" position to provide power to the crane.
12. Lower the winch to detach the crane hook from the tie-down eye on the boom support.
13. Always boom up to clear the boom support and truck before you rotate or extend boom to desired position.
14. When operating near electric power lines, comply with the requirements of OSHA 29 CFR Part 1426.1408. Summarized in Figure 1 and Table 1, no part of the crane or load may enter the danger zone.
15. For power lines rate 50 kV or below, minimum clearance between the lines and any part of the crane or load (including handling appendages) shall be 10 ft (3 m). For higher voltages, see Table 1.
16. Caution shall be exercised when working near overhead power lines because they can move horizontally or vertically due to wind, moving the danger zone to new position.
17. While in transit with no load and boom lowered, the clearance shall be as specified in Table 1.
18. The crane is now in operating position and ready for handling the load.
19. No crane shall be loaded beyond the specifications of the load rated chart.
20. The load to be lifted is to be within the rated capacity of the crane (refer to the crane load capacity chart).

OPERATING INSTRUCTIONS (Page 2 of 3)

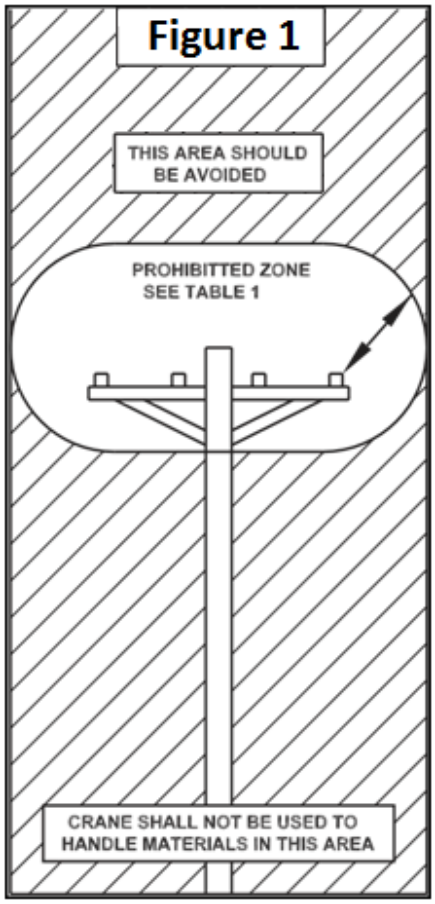


Table 1

Normal Voltage, kV (Phase to Phase)	Minimum Required Clearance feet (meters)
Operation near High Voltage Power Line	
Up to 50	10 (3.05)
Over 50 to 200	15 (4.57)
Over 200 to 350	20 (6.10)
Over 350 to 500	25 (7.62)
Over 500 to 750	35 (10.67)
Over 750 to 1000	45 (13.72)
Operation in Transit With No Load and Boom Lowered	
Up to 0.75	4 (1.22)
Over 0.75 to 50	6 (1.83)
Over 50 to 350	10 (3.05)
Over 345 to 750	16 (4.88)
Over 750 to 1000	20 (6.10)

21. When loads, which are not accurately known, are to be lifted, the person responsible for the job lift shall ascertain that the weight of the load does not exceed the crane ratings at the maximum radius at which the load is to be handled.
22. The hoist rope shall not be wrapped around the load.
23. The load shall be attached to the hook by means of slings or other devices of sufficient capacity.
24. The operator shall not leave the controls while the load is suspended.
25. No person should be permitted to stand or pass under a suspended load.
26. Before starting to lift, the following conditions should be noted:
    a. The hoist rope shall not be kinked.
    b. Part lines shall not be twisted around each other.
    c. The hook shall be brought over the load in such a manner as to minimize swinging.
    d. The effect of ambient wind on the load and on crane stability.
27. The person directing the lift shall see that:
    a. The crane is level and, where necessary, blocked.
    b. The load is well secured and balanced in the sling or lifting device before it is lifted more than a few inches.
    c. The lift and swing path is clear of obstructions.

OPERATING INSTRUCTIONS (Page 3 of 3)

28. During lifting operations, care shall be taken that:
    a. There is no sudden acceleration or deceleration of the moving load.
    b. Load, boom, or other parts of the machine do not contact any obstruction.
29. Side loading of boom shall be limited to freely suspended loads. Crane shall not be used for dragging loads sideways.
30. The operator should never carry loads over people.
31. Neither the load nor boom shall be lowered below the point where less than five full wraps of rope remain on the winch drum.
32. When rotating the crane, sudden starts and stops shall be avoided. Rotating speed shall be such that the load does not swing out beyond the radius at which it can be controlled. A tag or restraint line should be used during rotation to control the load.
33. Personnel shall not be permitted to ride the bare hook or a load of material suspended from the hook.
34. Do not move the vehicle when the crane is being used.
35. The crane shall be in stowed position before traveling.
36. Make sure the remote control is properly stored in a dry area.

INSPECTION & MAINTENANCE SCHEDULE

COMPONENT	DAILY	WEEKLY	MONTHLY	EVERY 3 MONTHS	YEARLY	NOTES
Motor Brushes				X		Check
Cable Drum	X					Make sure the cable is wound evenly on the drum
Cable	X					Check for cut or broken strands, kinking etcetera *
Load Hook	X					Ckeck for any cracks or deformation of the hook or latch
Sheaves and Bearings				X		Inspect for any damage and add grease to bearings. Make sure the sheaves turn freely
Rotational Bearing				X Or more often under severe conditions		Add grease to the bearing
Base Mounting Bolts & Other Bolts		X				Check the bolt torque for the four mounting bolts and tighten other bolts as required
Hydraulic Hoses	X					Inspect for any damage or leakage at fittings
Hydraulic Fluid	X					Check fluid level at the reservoir before each shift
Hydraulic Reservoir					X	Drain, flush, and refill with hydraulic fluid
Hydraulic Oil Filter					X	Replace Spin-On Oil Filter
Boom Wear Pads				X		Inspect pads and replace as required
Boom Pivots				X Or more often under severe conditions		Add grease to fittings **

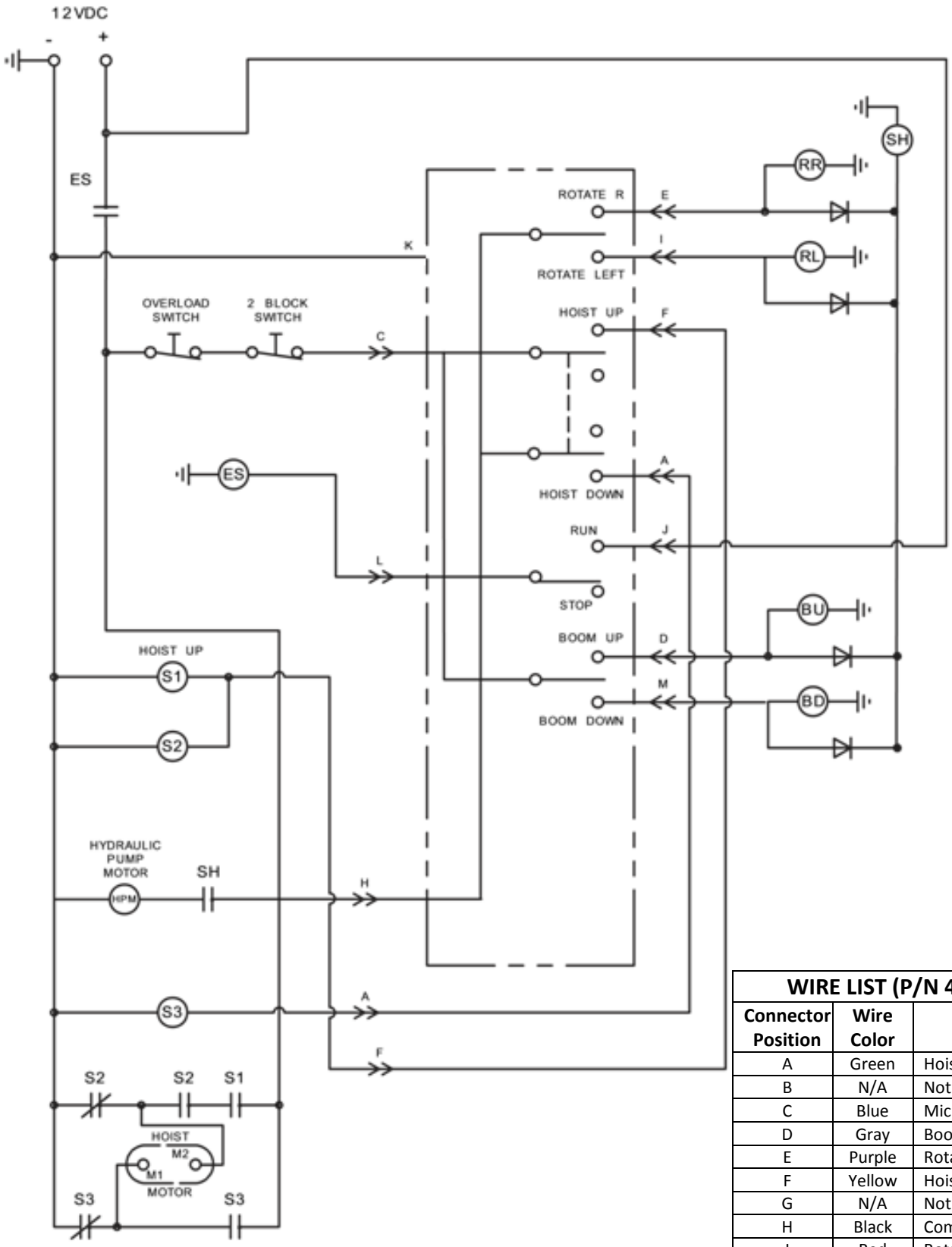
* To extend the life of cable, clean it periodically with a wire brush and lubricate it lightly with oil.

** All other bushings used are made of brass impregnated with an oil and graphite compound and require no maintenance. Other parts may be lubricated with a few drops of oil as needed.

LUBRICATION & HYDRAULIC FLUID SPECIFICATIONS

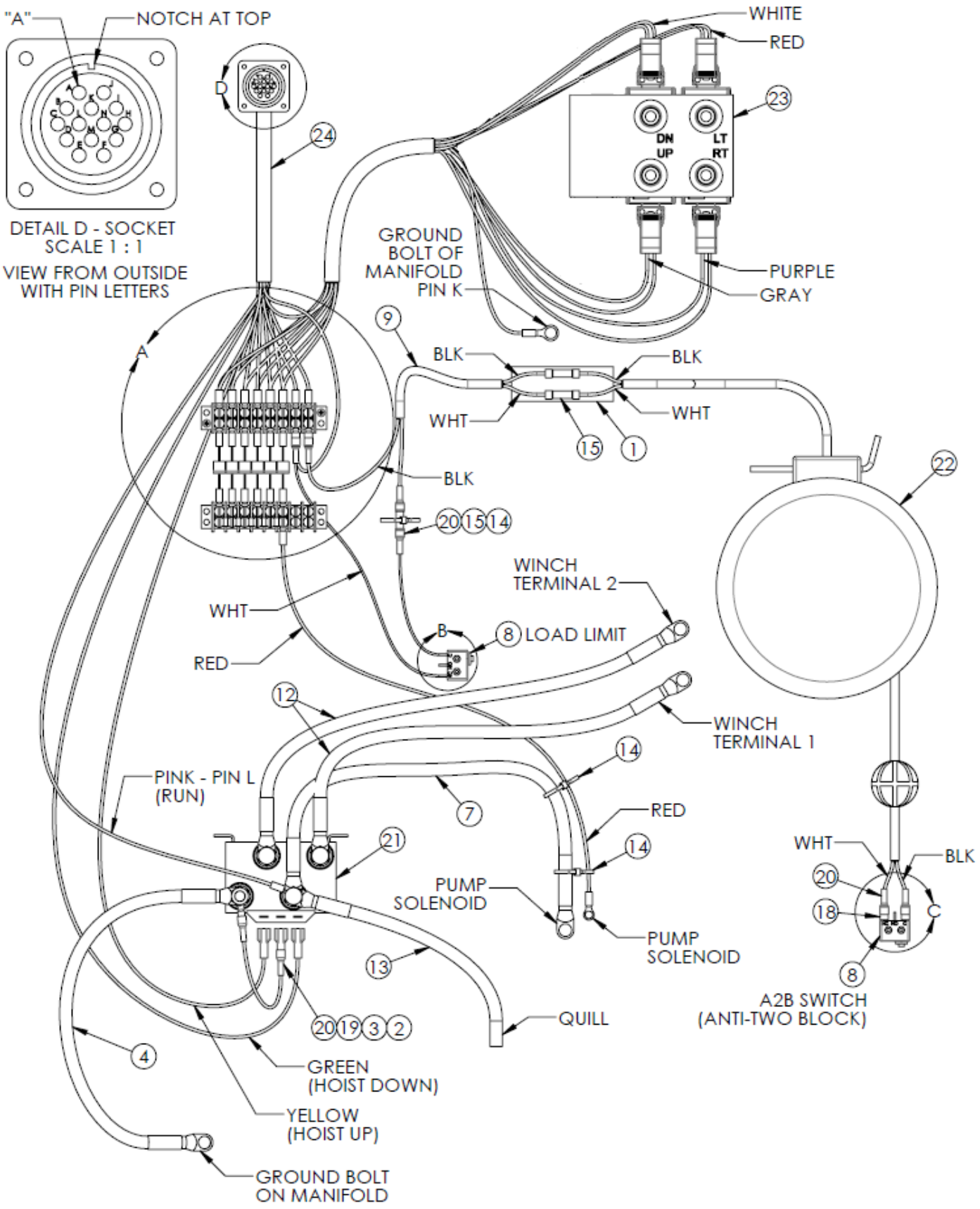
1. Rotational Bearings: Mobil grease CM-S or equivalent
2. Hydraulic Fluid: Mobil DTE26 or equivalent premium grade hydraulic fluid

WIRING SCHEMATIC (ER MODEL)



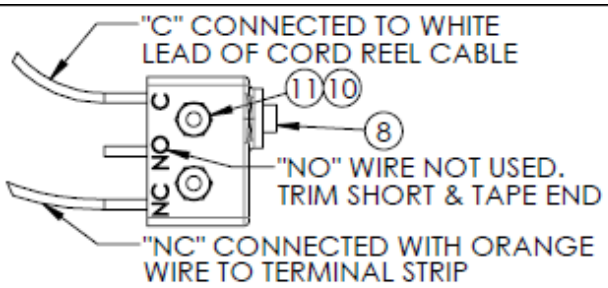
WIRE LIST (P/N 45180)		
Connector Position	**Wire Color**	**Usage**
A	Green	Hoist Down
B	N/A	Not Used
C	Blue	Microswitch
D	Gray	Boom Up (BU)
E	Purple	Rotate Right (RR)
F	Yellow	Hoist Up
G	N/A	Not Used
H	Black	Common (+)
I	Red	Rotate Left (RL)
J	Orange	Emergency Stop
K	No wire	Ground
L	Pink	Emergency Stop
M	White	Boom Down (BD)

ELECTRICAL LAYOUT (ER MODEL) (W0181) (Page 1 of 2)

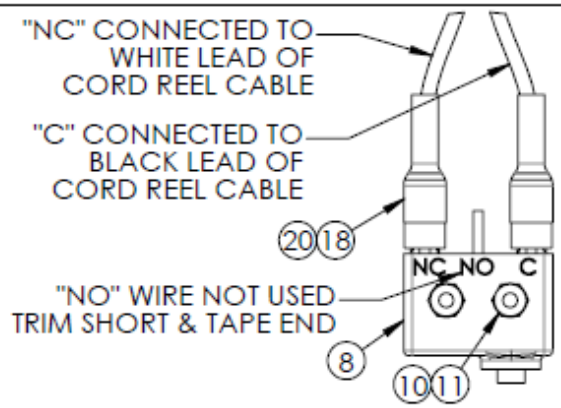


ELECTRICAL LAYOUT (ER MODEL) (W0181) (Page 2 of 2)

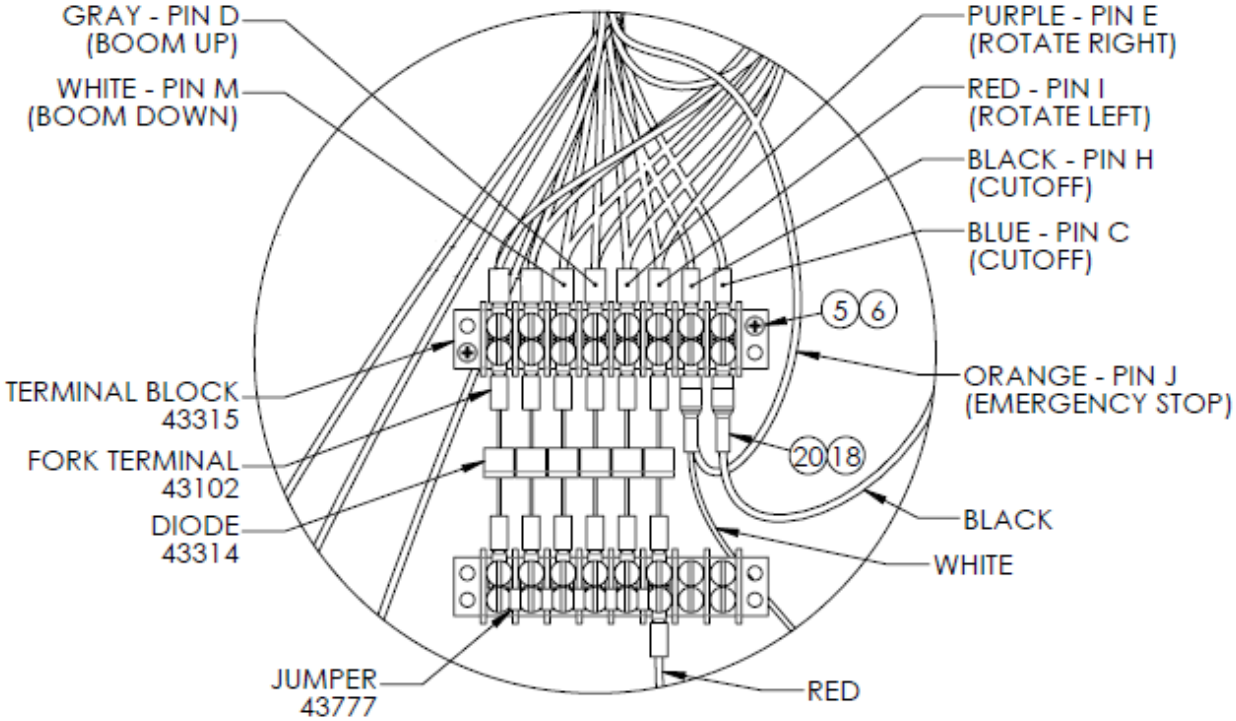
ITEM	PART #	QTY	DESCRIPTION
1	41150	0.25	HEAT SHRINK-#1X12"L
2	41156	1	TERMINAL-18GA .31 RING
3	43100	0.5	WIRE-#18 BULK BRN FEET
4	43263	1	WIRE ASY-#02 16.0 GRND
5	43362	2	SCRW-PAN #4-40X3/4
6	43363	2	NUT-HX #4-40
7	43452	1	WIRE ASY-#02 18.5 PUMP
8	43683	2	MICROSWITCH-2000 SERIES
9	43690	8	WIRE-#16 3-COND FEET
10	43699	4	SCRW-PAN #2-56X3/4 SLOT
11	43700	4	NUT-HX #2-56
12	43738	2	WIRE ASY-#02 36.0 GRND
13	43804	1	WIRE ASY-#02 36.0 QUILL
14	43816	3	TIE-CABLE 03.9L BLK NYL
15	43905	3	CONNECTOR-BUTT 14GA
16	43915	4	WASHER-LOCK INTERNAL #2
17	43916	2	WASHER-LOCK INTERNAL #4
18	43999	4	TERMINAL-14GA #6 FORK
19	44000	1	TERMINAL-14GA QD FEM
20	44008	8	HEAT SHRINK-1/4"X3/4"L
21	44239	1	CONTACTOR-3200 WARN34440
22	44248	1	REEL-CORD 20FT 18/3
23	45176	1	MANIFOLD PKG-3200ERX V2
24	45180	1	HARNESS-3200 ER 5195+



DETAIL B - LOAD LIMIT
SCALE 1 : 1

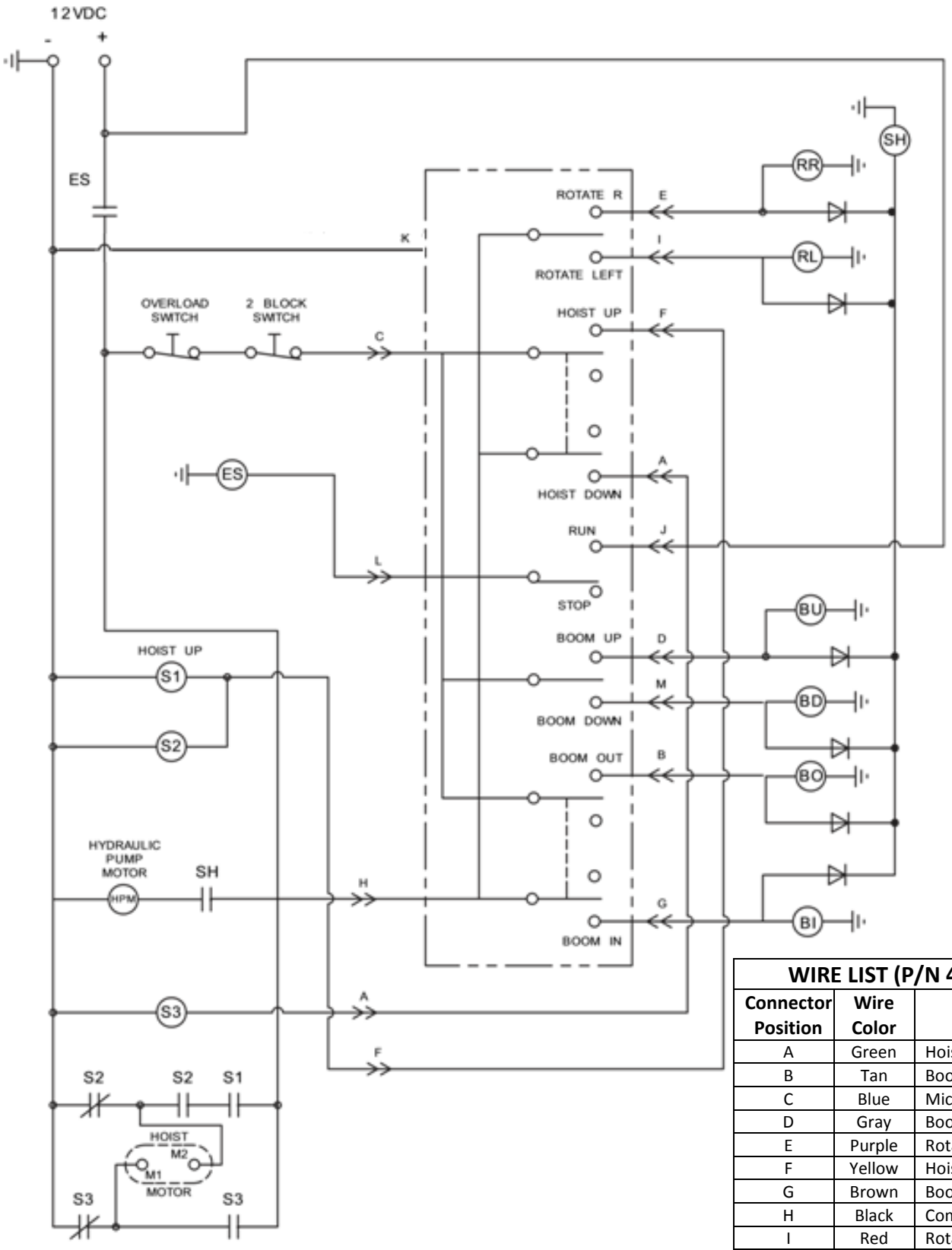


DETAIL C - ANTI-TWO BLOCK
SCALE 1 : 1



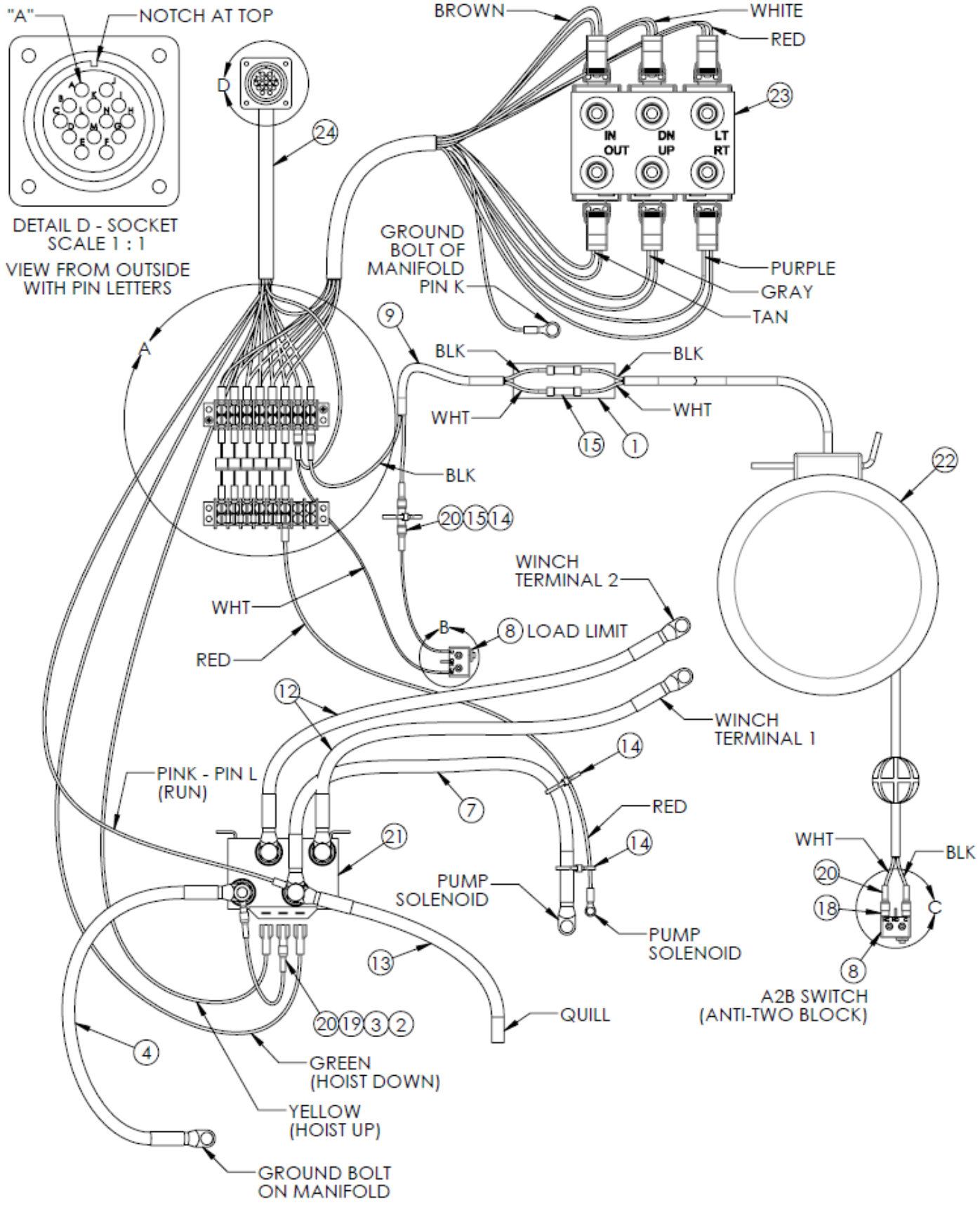
DETAIL A - TERMINAL STRIPS
SCALE 1 : 2

WIRING SCHEMATIC (ERX MODEL)



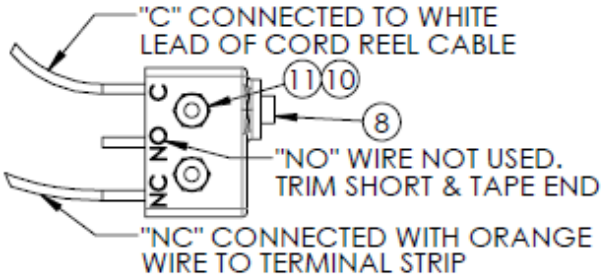
WIRE LIST (P/N 45179)		
Connector Position	**Wire Color**	**Usage**
A	Green	Hoist Down
B	Tan	Boom Out (BO)
C	Blue	Microswitch
D	Gray	Boom Up (BU)
E	Purple	Rotate Right (RR)
F	Yellow	Hoist Up
G	Brown	Boom In (BI)
H	Black	Common (+)
I	Red	Rotate Left (RL)
J	Orange	Emergency Stop
K	No wire	Ground
L	Pink	Emergency Stop
M	White	Boom Down (BD)

ELECTRICAL LAYOUT (ERX MODEL) (W0180) (Page 1 of 2)

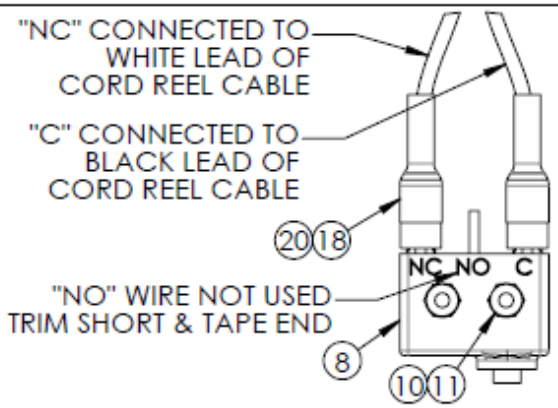


ELECTRICAL LAYOUT (ERX MODEL) (W0180) (Page 2 of 2)

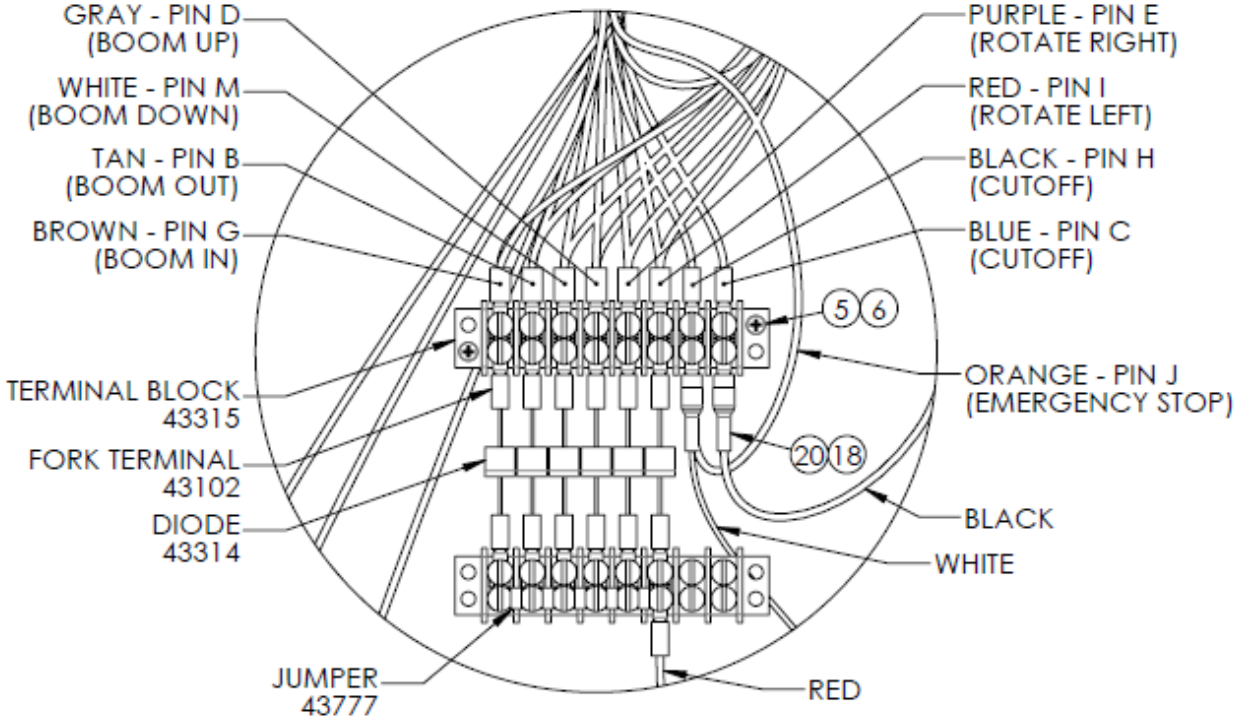
ITEM	PART #	QTY	DESCRIPTION
1	41150	0.25	HEAT SHRINK-#1X12"L
2	41156	1	TERMINAL-18GA .31 RING
3	43100	0.5	WIRE-#18 BULK BRN FEET
4	43263	1	WIRE ASY-#02 16.0 GRND
5	43362	2	SCRW-PAN #4-40X3/4
6	43363	2	NUT-HX #4-40
7	43452	1	WIRE ASY-#02 18.5 PUMP
8	43683	2	MICROSWITCH-2000 SERIES
9	43690	8	WIRE-#16 3-COND FEET
10	43699	4	SCRW-PAN #2-56X3/4 SLOT
11	43700	4	NUT-HX #2-56
12	43738	2	WIRE ASY-#02 36.0 GRND
13	43804	1	WIRE ASY-#02 36.0 QUILL
14	43816	3	TIE-CABLE 03.9L BLK NYL
15	43905	3	CONNECTOR-BUTT 14GA
16	43915	4	WASHER-LOCK INTERNAL #2
17	43916	2	WASHER-LOCK INTERNAL #4
18	43999	4	TERMINAL-14GA #6 FORK
19	44000	1	TERMINAL-14GA QD FEM
20	44008	8	HEAT SHRINK-1/4"X3/4"L
21	44239	1	CONTACTOR-3200 WARN34440
22	44248	1	REEL-CORD 20FT 18/3
23	45176	1	MANIFOLD PKG-3200ERX V2
24	45179	1	HARNESS-3200 ERX 5195+



DETAIL B - LOAD LIMIT
SCALE 1 : 1

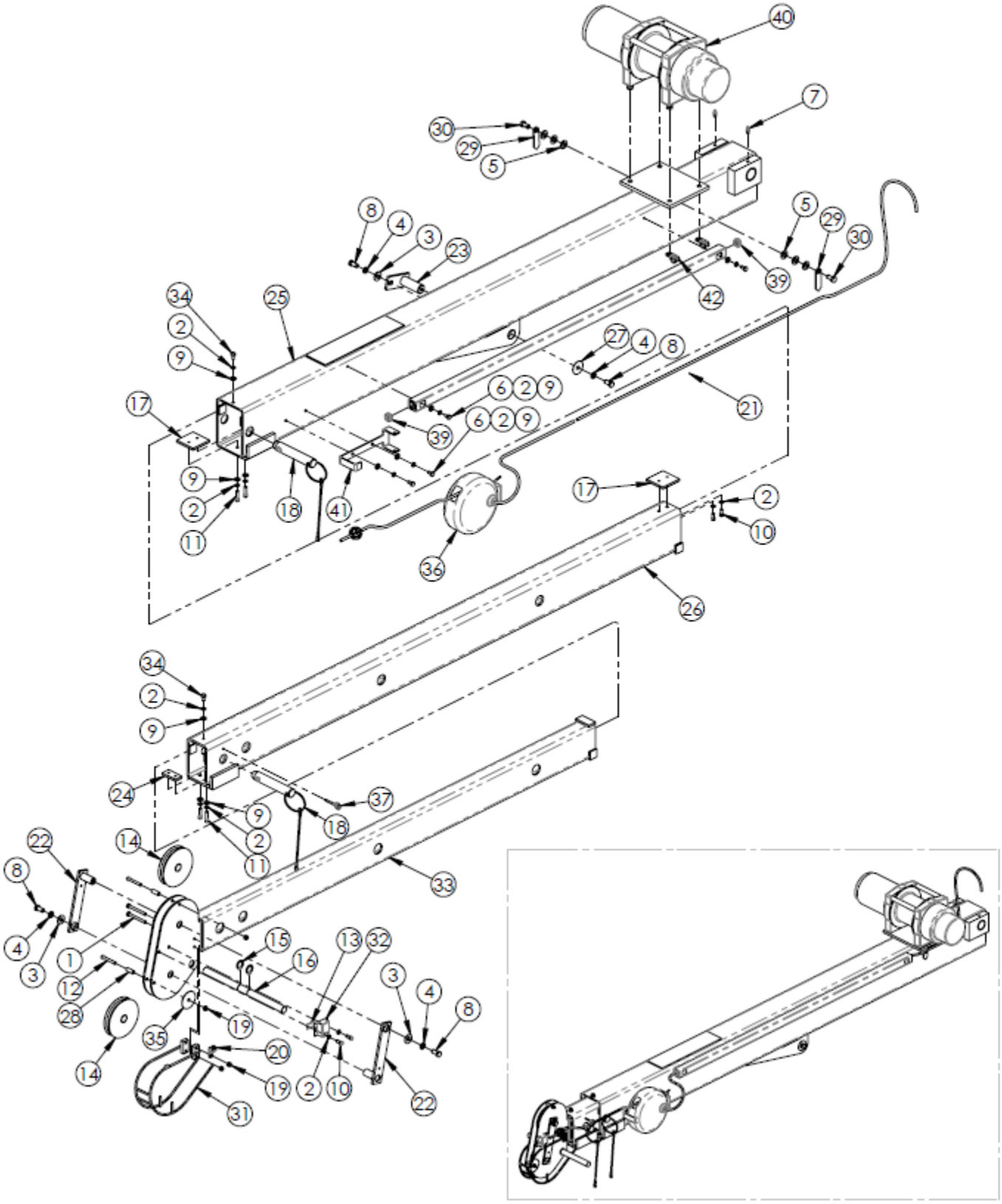


DETAIL C - ANTI-TWO BLOCK
SCALE 1 : 1



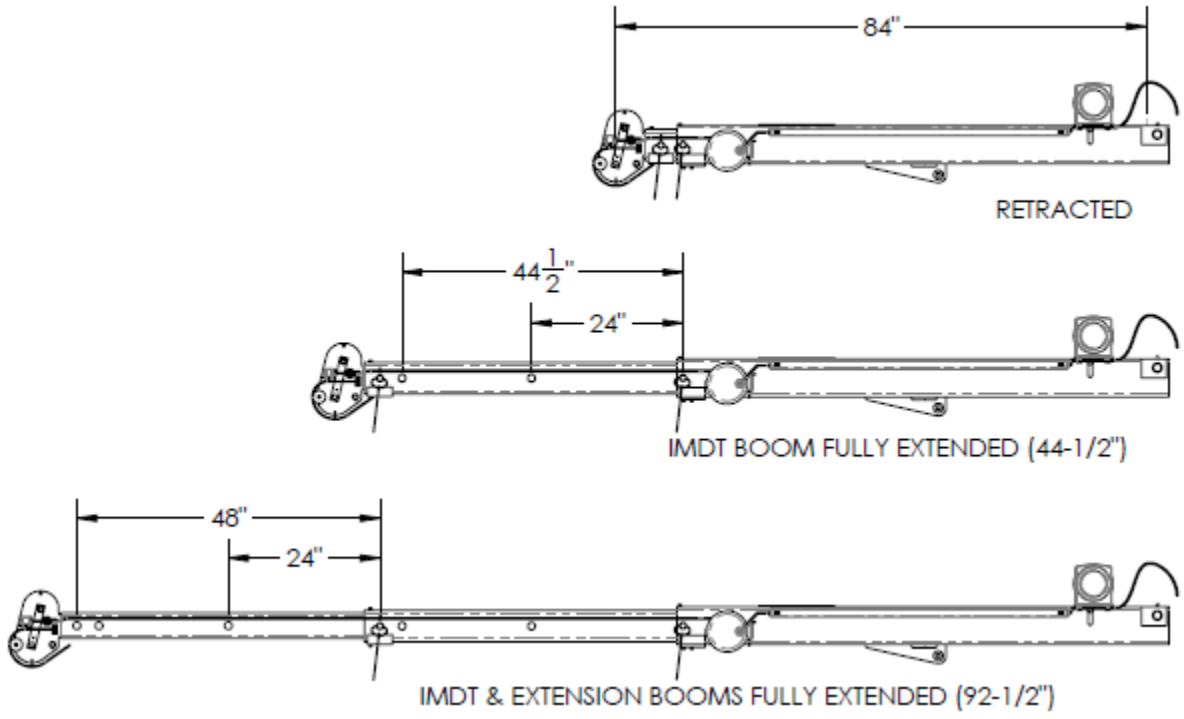
DETAIL A - TERMINAL STRIPS
SCALE 1 : 2

BOOM ASSEMBLY (ER MODEL) (P/N 43785) (Page 1 of 2)

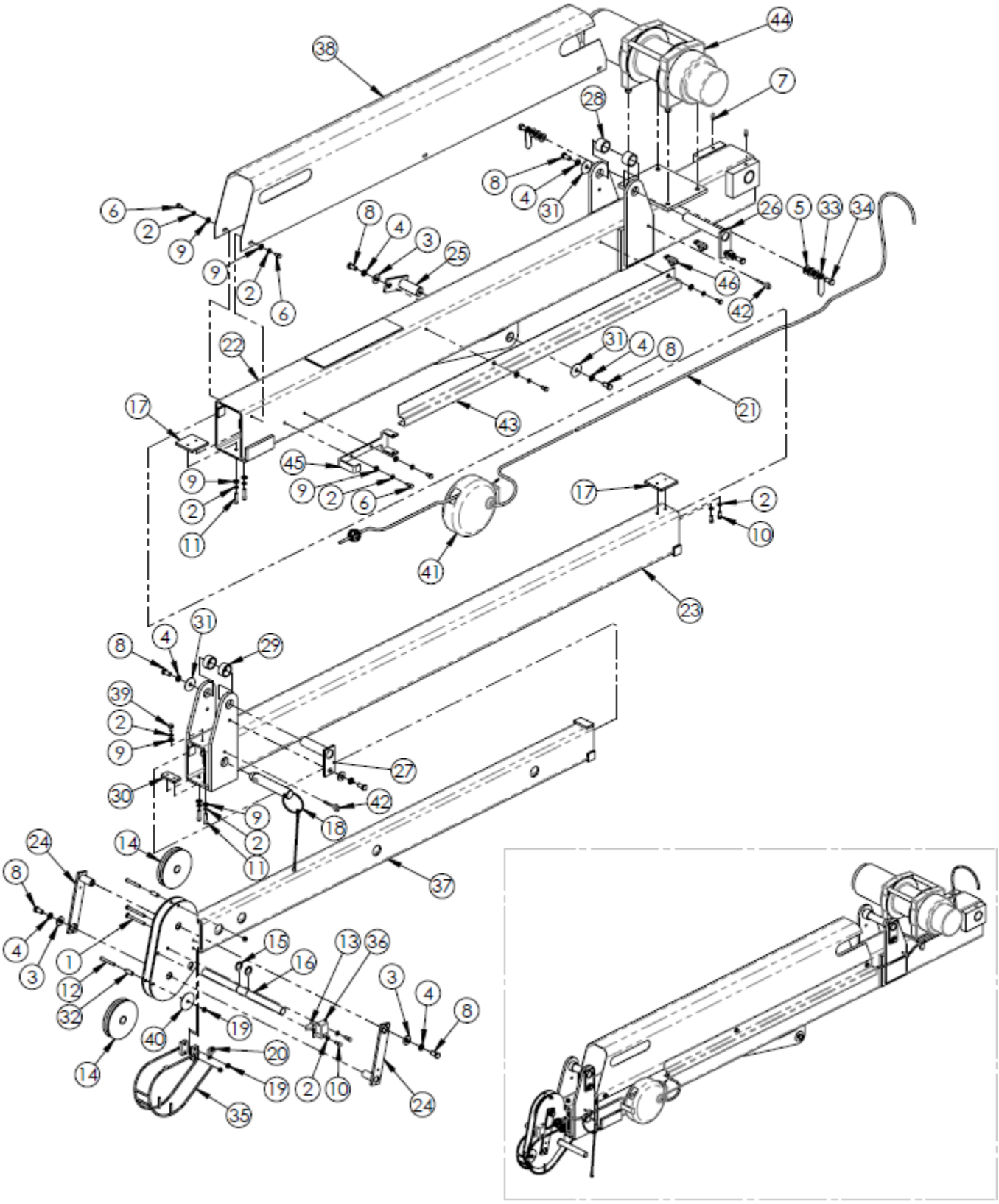


BOOM ASSEMBLY (ER MODEL) (P/N 43785) (Page 2 of 2)

ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION
1	07756	2	SCRW-CPHEX 0.25 2.5 GR2	22	43751	2	PIN-W/KPR 0.75 1.62/3200
2	07882	14	WASHER-LOCK 1/4	23	43753	1	PIN-W/KPR 1.00 2.44/3200
3	07885	3	WASHER-FLT 3/8 W	24	43783	1	SPACER-3200 EXT BOOM
4	07886	4	WASHER-LOCK 3/8	25	43820	1	BOOM ASY-3200ER MAIN
5	07887	6	WASHER-FLT 7/16 N	26	43821	1	BOOM ASY-3200ER IMDT
6	07916	4	BOLT-HX 1/4-20X1/2	27	43831	1	WASHER-FLT 3/8 FENDER
7	40080	2	FITTING-GREASE .25NF	28	43909	2	SPACER-3200 BOOM HEAD
8	40911	4	SCREW-CPHX .50UNC X .75	29	44009	2	POINTER-DEGREE INDICATOR
9	40986	10	WASHER-FLT 1/4 N (40986)	30	44031	2	BOLT-HX 3/8-16X3/4 LK
10	41013	4	SCREW-CPSKT 0.25 0.5	31	44085	1	CAGE-WIRE TWO BLOCK-3200
11	41015	4	SCREW-CPSKT 0.25 1.0	32	44086	1	MICROSWITCH HOUSING
12	41016	2	SCREW-CPSKT 0.25 1.7	33	44088	1	BOOM-3200-3ERX-15 EXT
13	41150	0.083	HEAT SHRINK-#1X12"L	34	44102	2	SCREW-CPHEX 0.25X.50 THD
14	43041	2	PULLEY-4.0 OD .75BORE	35	44112	1	WASHER-FLT 1/4 FENDER
15	43139	2	RING-RTNG EXT 0.750 1P	36	44248	1	REEL-CORD 20FT 18/3
16	43166	1	PIN-GRVD. 0.75 1.37	37	44249	1	EYE BOLT .25-20UNC
17	43331	2	SPACER-BOOM 3200	38	44444	1	CORD REEL GUARD
18	43345	2	PIN-QUICK 1.00 4.00 W/L	39	44445	2	GROMMET-CORD REEL
19	43425	4	NUT-HEX .250NC FLEX	40	44617	1	WINCH-WARN DC2000
20	43634	1	CLAMP-LOOM 1/4 MTG	41	44640	1	BRACKET - CABLE REEL
21	43690	8	WIRE-#16 3-COND FEET	42	44798	2	CLAMP-LOOM 3/8 MTG

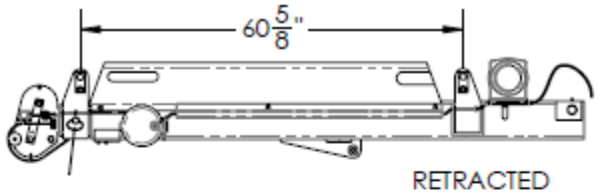


BOOM ASSEMBLY (ERX MODEL) (P/N 43784) (Page 1 of 2)

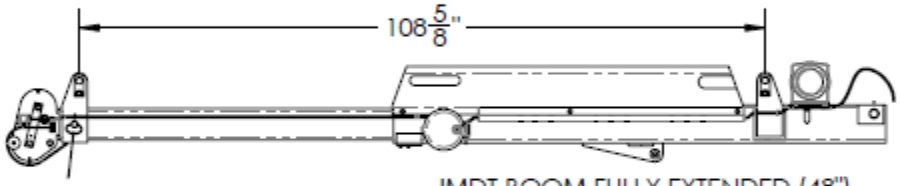


BOOM ASSEMBLY (ERX MODEL) (P/N 43784) (Page 2 of 2)

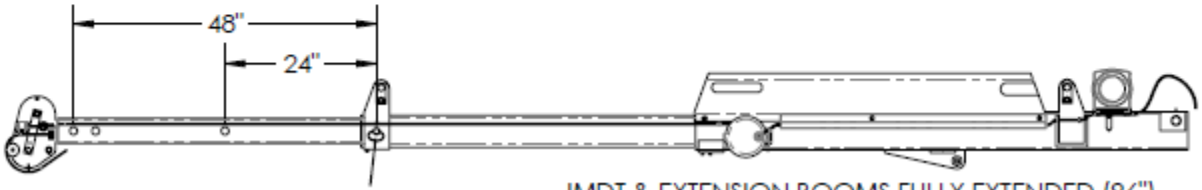
ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION
1	07756	2	SCRW-CPHEX 0.25 2.5 GR2	24	43751	2	PIN-W/KPR 0.75 1.62/3200
2	07882	17	WASHER-LOCK 1/4	25	43753	1	PIN-W/KPR 1.00 2.44/3200
3	07885	5	WASHER-FLT 3/8 W	26	43754	1	PIN-W/KPR 1.00 5.81/3200
4	07886	8	WASHER-LOCK 3/8	27	43755	1	PIN-W/KPR 1.00 3.81/3200
5	07887	6	WASHER-FLT 7/16 N	28	43758	2	SPACER-3200 EXT CYL HEAD
6	07916	8	BOLT-HX 1/4-20X1/2	29	43759	2	SPACER-3200 EXT CYL ROD
7	40080	2	FITTING-GREASE .25NF	30	43783	1	SPACER-3200 EXT BOOM
8	40911	8	SCREW-CPHX .50UNC X .75	31	43831	3	WASHER-FLT 3/8 FENDER
9	40986	13	WASHER-FLT 1/4 N (40986)	32	43909	2	SPACER-3200 BOOM HEAD
10	41013	4	SCREW-CPSKT 0.25 0.5	33	44009	2	POINTER-DEGREE INDICATOR
11	41015	4	SCREW-CPSKT 0.25 1.0	34	44031	2	BOLT-HX 3/8-16X3/4 LK
12	41016	2	SCREW-CPSKT 0.25 1.7	35	44085	1	CAGE-WIRE TWO BLOCK-3200
13	41150	0.083	HEAT SHRINK-#1X12"L	36	44086	1	MICROSWITCH HOUSING
14	43041	2	PULLEY-4.0 OD .75BORE	37	44088	1	BOOM-3200-3ERX-15 EXT
15	43139	2	RING-RTNG EXT 0.750 1P	38	44093	1	COVER-3200ERX EXTEND CYL
16	43166	1	PIN-GRVD. 0.75 1.37	39	44102	1	SCREW-CPHEX 0.25X.50 THD
17	43331	2	SPACER-BOOM 3200	40	44112	1	WASHER-FLT 1/4 FENDER
18	43345	1	PIN-QUICK 1.00 4.00 W/L	41	44248	1	REEL-CORD 20FT 18/3
19	43425	4	NUT-HEX .250NC FLEX	42	44249	2	EYE BOLT .25-20UNC
20	43634	1	CLAMP-LOOM 1/4 MTG	43	44258	1	CORD GUIDE-3200 CRANE
21	43690	8	WIRE-#16 3-COND FEET	44	44617	1	WINCH-WARN DC2000
22	43705	1	BOOM-3200-3ERX-15 MAIN	45	44640	1	BRACKET - CABLE REEL
23	43706	1	BOOM ASY-3200ERX IMDT	46	44798	2	CLAMP-LOOM 3/8 MTG



RETRACTED

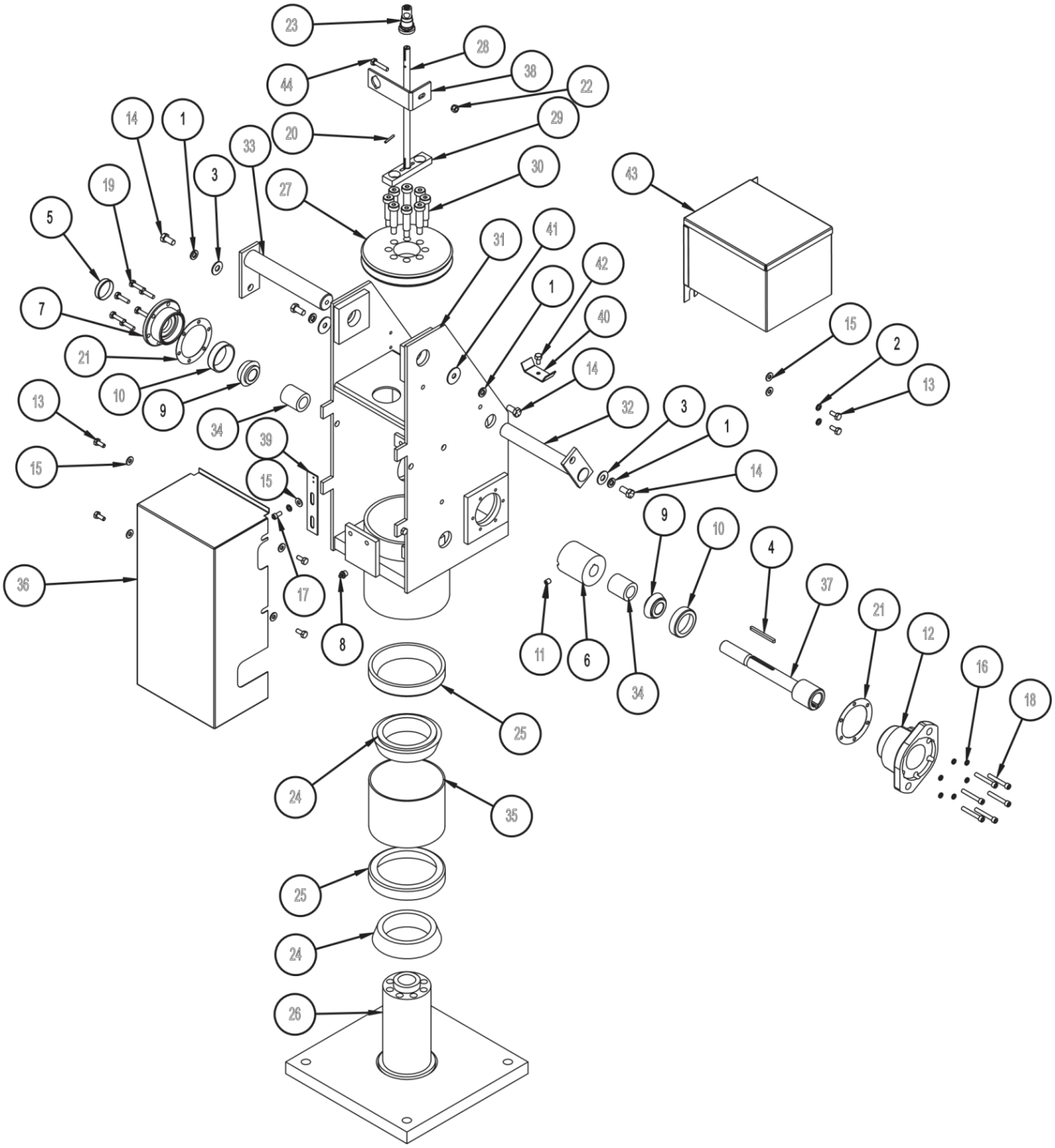


IMDT BOOM FULLY EXTENDED (48")



IMDT & EXTENSION BOOMS FULLY EXTENDED (96")

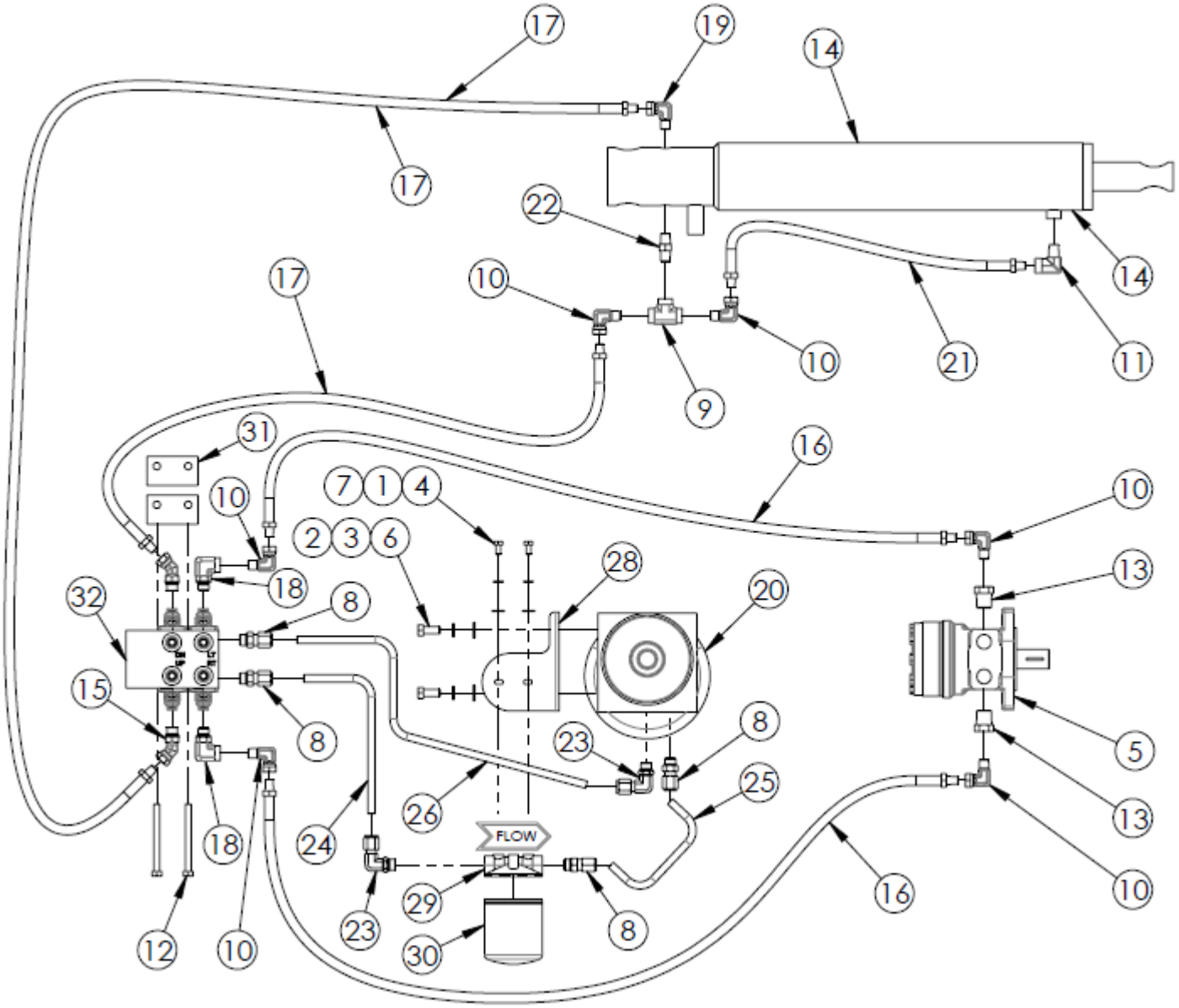
TURRET ASSEMBLY (P/N 43793) (Page 1 of 2)



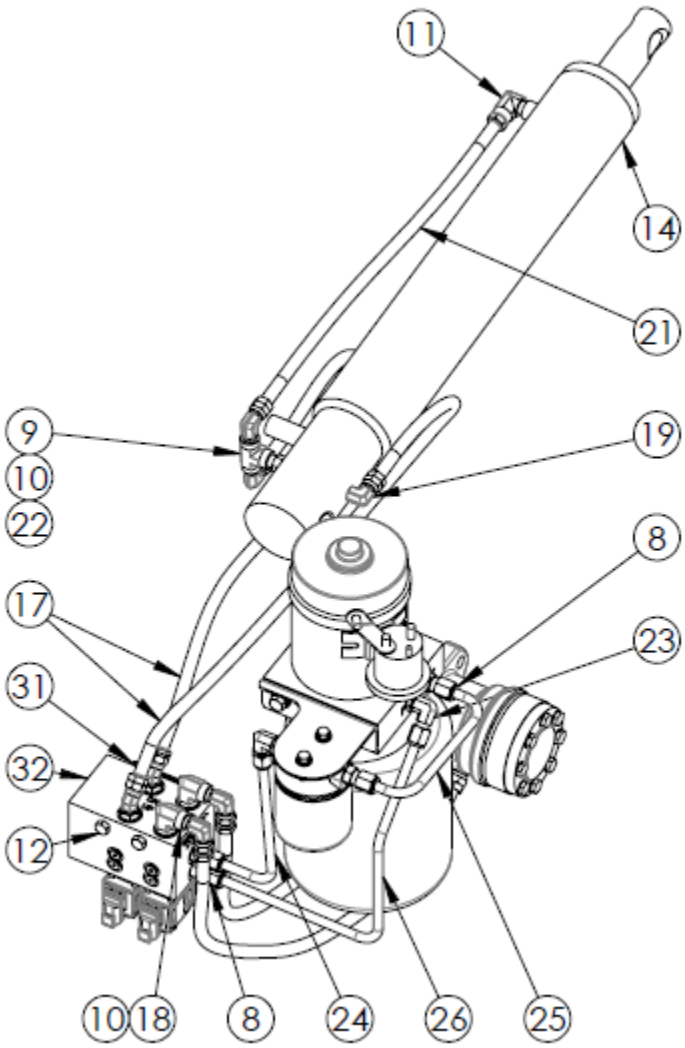
TURRET ASSEMBLY (P/N 43793) (Page 2 of 2)

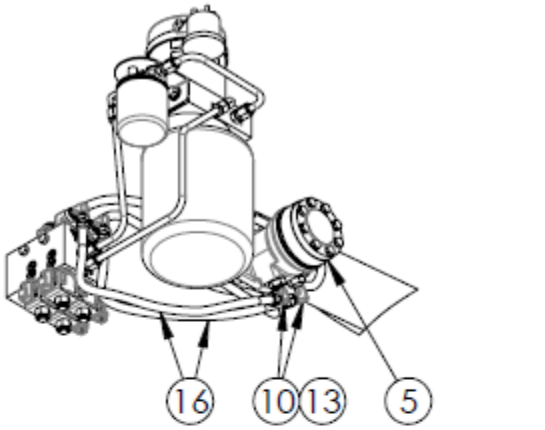
Item Number	Part Number	Description	Qty
1	03029	.375 WASHER - LOCK	4
2	07882	WASHER - LOCK 1/4"	3
3	07885	WASHER - FLAT 3/8	2
4	40006	KEY - 08 WORM 0.18 2.37	1
5	40014	PLUG - 08 BRG COVER	1
6	40034	WORM - 08 36:1 LH	1
7	40078	COVER - 08 BRG	1
8	40082	GREASE FITTING - 1/8NPT	1
9	40156	BEARING - CONE 08 0.87 ID	2
10	40157	BEARING - CUP 08 2.12 OD	2
11	40605	SCREW - STSKT 0.37 0.4 OVL	1
12	40816	ADAPTER - HYD 08 2 BOLT A	1
13	40900	SCREW - CPHEX 0.25 x 0.6	7
14	40911	SCREW - CPHEX 0.37 0.7	4
15	40986	WASHER - FLAT 1/4 SAE	7
16	40992	WASHER - LOCK, HI-COLLAR.25"	6
17	41013	SCREW - CPSKT 0.25 0.5	1
18	41016	SCREW - CAP SKT .25" x 1.75"	6
19	41095	SCREW - CAP HEX HD., .25" x 1.0"	6
20	41124	PIN - ROLL, 0.125" x 1.000"	1
21	41967	GASKET - BEARING HOLDER	2
22	43090	NUT - HEX .250NC SELF LOG	1
23	43201	CONNECTOR-CABLE FEM PANL	1
24	43297	BEARING - CONE 3200 3.37 ID	2
25	43298	BEARING - CUP 3200 5.37 OD	2
26	43305	BASE - 3200 SERIES	1
27	43327	GEAR - 3200 36:1 LH	1
28	43336	ROD - 3200 ELEC ROD CONNECT	1
29	43346	PAD-MTG F/CONNECTING ROD	1
30	43360	SCREW - SKTHD. SHLDR - 0.5" x 1.5"	8
31	43704	TURRET - 3200 SERIES	1
32	43752	PIN - W/KPR 1.00 7.69/3200	1
33	43756	PIN - W/KPR 1.25 7.69/3200	1
34	43760	SPACER - 3200 WORM 1.57	2
35	43761	SPACER - 3200 TURRET ROT BRG	1
36	43762	COVER - 3200 TURRET REAR	1
37	43763	SHAFT - 08 WORM 3200 ROT	1
38	43767	BRACKET - 3200 CONT ROT MT	1
39	43768	BRACKET MICROSWITCH MTG.	1
40	43774	BRACKET - 3200 HOSE RING	1
41	43831	WASHER - FENDER 3/8 PLATED	2
42	44102	SCRW - CP HX 1/4C x 1-1/2	1
43	44343	COVER - PUMP 3200 CRANE	1
44	44504	SCREW - CPHEX 0.25 1.25	1

HYDRAULIC LAYOUT (ER MODEL) (W0187) (Page 1 of 2)

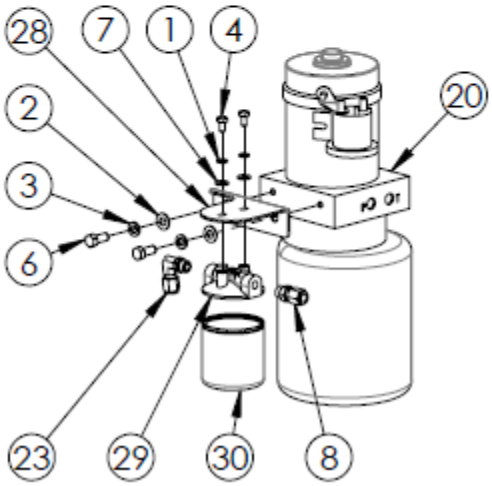


HYDRAULIC LAYOUT (ER MODEL) (P/N 43791) (Page 2 of 2)





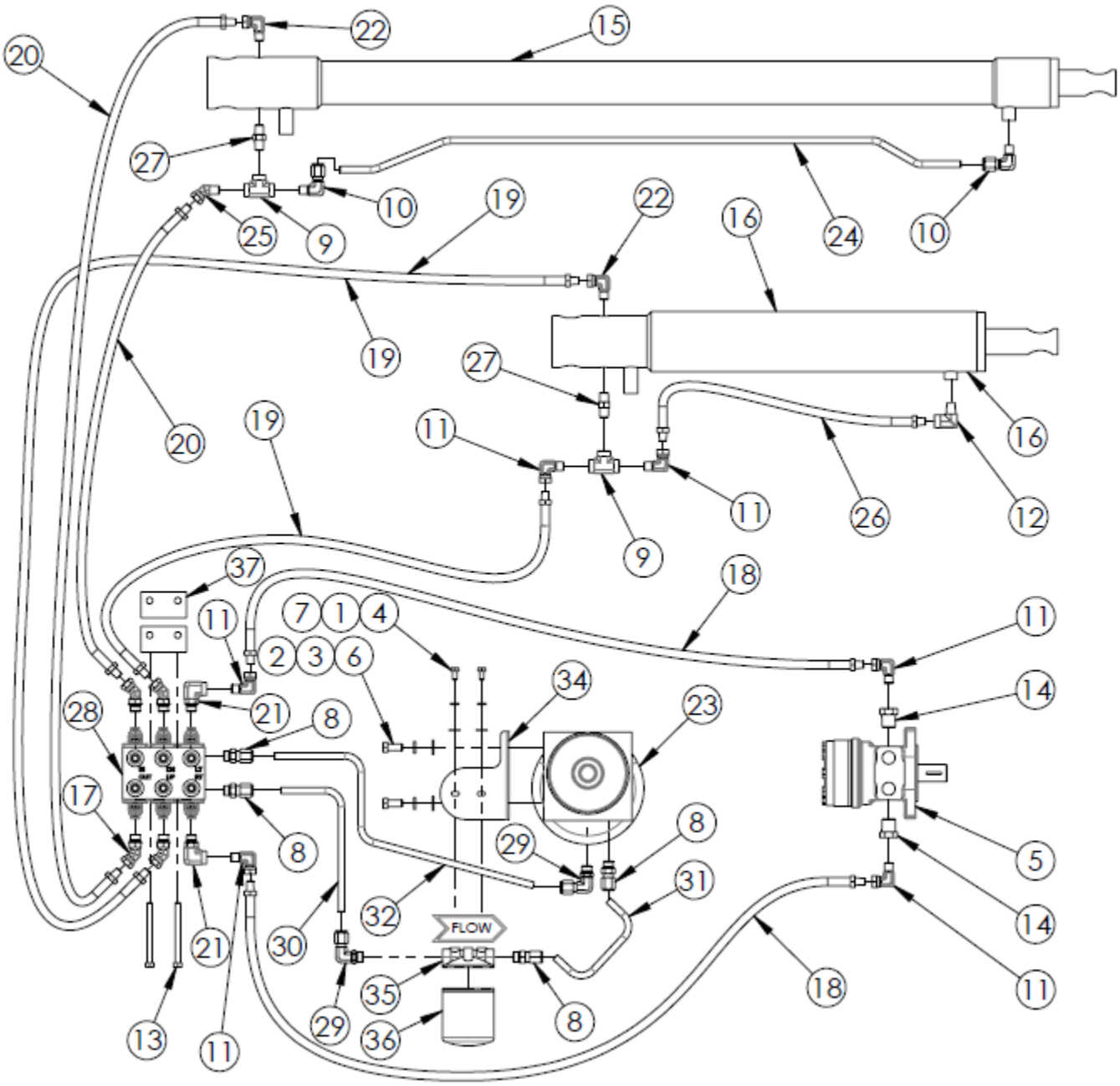
ROTATIONAL MOTOR AND HOSES



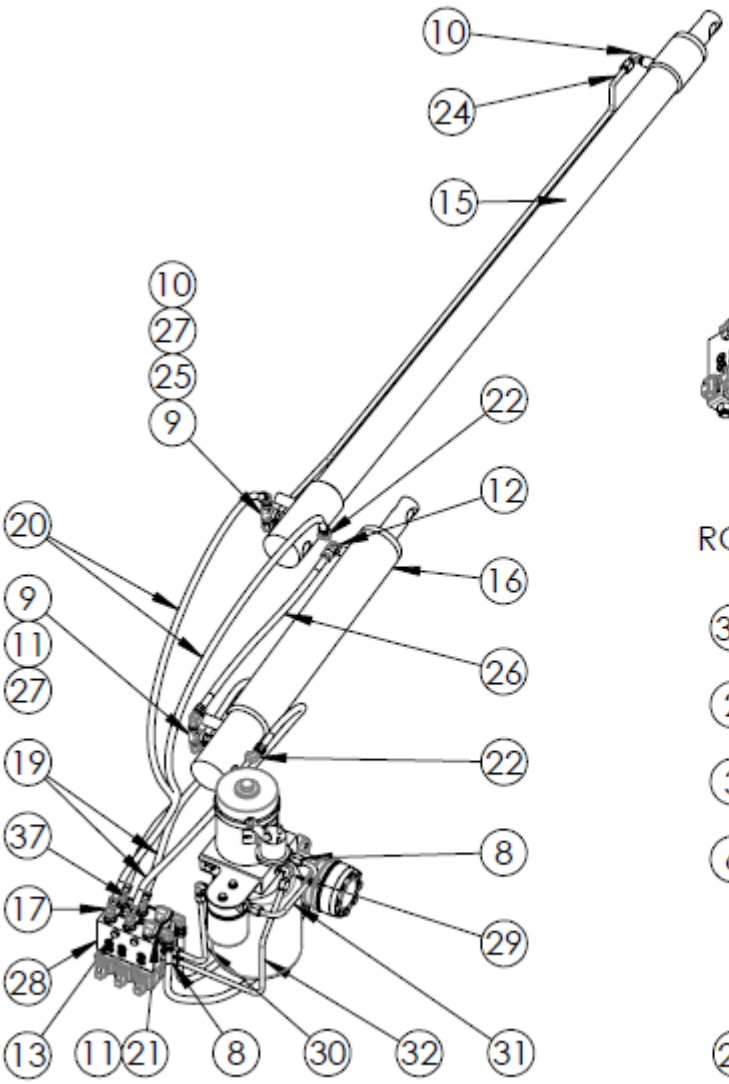
HYDRAULIC PUMP AND OIL FILTER

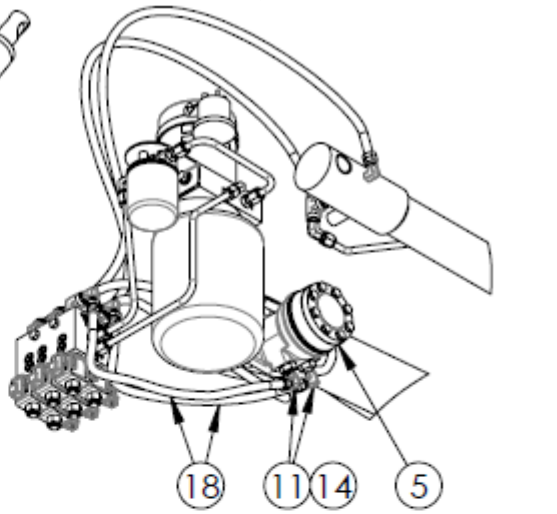
ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION
1	7882	2	WASHER-LOCK 1/4	17	43780	2	HOSE-HYD 0.25D .25MP 34.0L
2	7885	2	WASHER-FLT 3/8 N	18	43799	2	FITTG-.56MS .25FP 90
3	7886	2	WASHER-LOCK 3/8	19	43801	1	FITTG-.25MP .25FPS ORF
4	7916	2	BOLT-HX 1/4-20X1/2	20	43802	1	PUMP ASY-3200 HYD 12V
5	40341	1	MOTOR-HYD 103-1028	21	44231	1	HOSE-HYD 0.25D .25MP 20.0L
6	40911	2	BOLT-HX 3/8-16X7/8	22	44232	1	NIPPLE-HEX .25MP .25MP
7	40986	2	WASHER-FLT 1/4 N (40986)	23	45182	2	FITTG-.56MS .38TBC 90
8	43370	4	FITTG-.56MS .37TB ST	24	45184	1	TUBE-3200 HYD MAN/FLTR
9	43374	1	FITTG-.25FP TEE	25	45185	1	TUBE-3200 HYD FLTR/PUMP
10	43376	6	FITTG-.25MP .25FPS 90	26	45186	1	TUBE-3200 HYD PRESSURE
11	43379	1	FITTING-.25MP .25FP 90	27	45188	8	HEAT SHRINK-3/4"X1"L CLR
12	43469	2	BOLT-HX 5/16-18X3-3/4	28	45189	1	BRKT-3200 FILTER
13	43541	2	FITTG-.50MP .25FP ST	29	45190	1	FILTER HEAD-HYD BF-06-0
14	43715	1	CYL-HYD 3.00B 14.50S	30	45191	1	FILTER-HYD BE-10-18
15	43775	2	FITTING-.56MS .25FPS45	31	45192	2	SPACER-3200 MANIFOLD
16	43779	2	HOSE-HYD 0.25D .25MP 17.2L	32	45193	1	MANIFOLD PKG-3200ER 5195+

HYDRAULIC LAYOUT (ERX MODEL) (W0186) (Page 1 of 2)

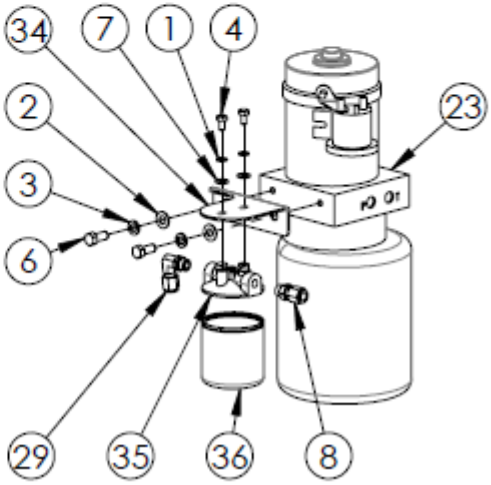


HYDRAULIC LAYOUT (ERX MODEL) (P/N 43790) (Page 2 of 2)





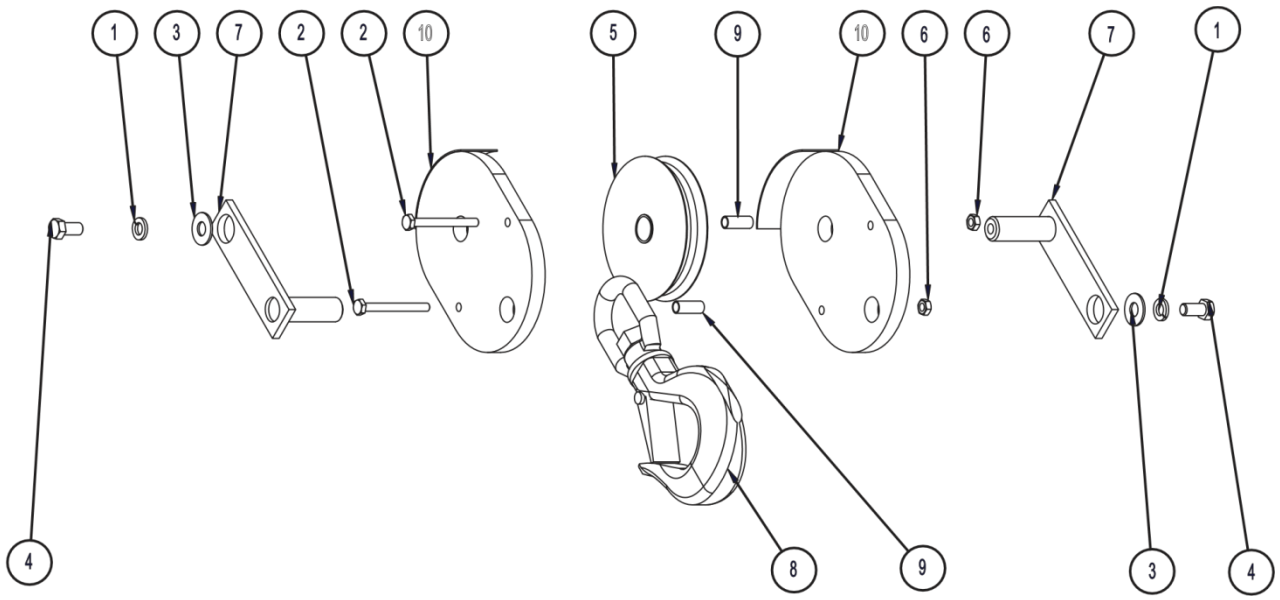
ROTATIONAL MOTOR AND HOSES



HYDRAULIC PUMP AND OIL FILTER

ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION
1	7882	2	WASHER-LOCK 1/4	20	43781	2	HOSE-HYD 0.25D .25MP 50.0L
2	7885	2	WASHER-FLT 3/8 N	21	43799	2	FITTG-.56MS .25FP 90
3	7886	2	WASHER-LOCK 3/8	22	43801	2	FITTG-.25MP .25FPS ORF
4	7916	2	BOLT-HX 1/4-20X1/2	23	43802	1	PUMP ASY-3200 HYD 12V
5	40341	1	MOTOR-HYD 103-1028	24	44126	1	TUBE-3200 HYD CYL EXT
6	40911	2	BOLT-HX 3/8-16X7/8	25	44184	1	FITTING-.25MP .25FPS45
7	40986	2	WASHER-FLT 1/4 N (40986)	26	44231	1	HOSE-HYD 0.25D .25MP 20.0L
8	43370	4	FITTG-.56MS .37TB ST	27	44232	2	NIPPLE-HEX .25MP .25MP
9	43374	2	FITTG-.25FP TEE	28	45176	1	MANIFOLD PKG-3200ERX V2
10	43375	2	FITTG-.25MP .37TBC 90	29	45182	2	FITTG-.56MS .38TBC 90
11	43376	6	FITTG-.25MP .25FPS 90	30	45184	1	TUBE-3200 HYD MAN/FLTR
12	43379	1	FITTING-.25MP .25FP 90	31	45185	1	TUBE-3200 HYD FLTR/PUMP
13	43469	2	BOLT-HX 5/16-18X3-3/4	32	45186	1	TUBE-3200 HYD PRESSURE
14	43541	2	FITTG-.50MP .25FP ST	33	45188	12	HEAT SHRINK-3/4"X1"L CLR
15	43708	1	CYL-HYD 2.00B 48.00S	34	45189	1	BRKT-3200 FILTER
16	43715	1	CYL-HYD 3.00B 14.50S	35	45190	1	FILTER HEAD-HYD BF-06-0
17	43775	4	FITTING-.56MS .25FPS45	36	45191	1	FILTER-HYD BE-10-18
18	43779	2	HOSE-HYD 0.25D .25MP 17.2L	37	45192	2	SPACER-3200 MANIFOLD
19	43780	2	HOSE-HYD 0.25D .25MP 34.0L				

TRAVEL BLOCK ASSEMBLY (P/N 44090)



Item Number	Part Number	Description	Qty
1	03029	WASHER - LOCK 3/8”	2
2	07756	SCREW - CP HX ¼-20 X 2.5"	2
3	07885	WASHER - FLAT 3/8”	2
4	40911	SCRW - CP HX 5/16-18X3/4	2
5	43041	PULLEY-4.00D .75 BORE	1
6	43425	NUT - HEX LOCK ¼-20	2
7	43750	PIN - W/KPR 0.75 2.25 / 3200	2
8	43819	HOOK - 2 TON SWIVEL WITH LATCH	1
9	43909	SPACER	2
10	44087	PLATE - 3200 TRAV BLOCK	2

ANTI TWO-BLOCK MICROSWITCH RESETTING (ALL MODELS)

Your RKI crane is equipped with an anti two-block system, per OSHA 29 CFR Part 1926.1416(d)(3), to prevent damage from contact between the travel block and the boom tip. If the travel block is allowed to contact the end of the boom, continued operation could result in significant damage to the crane and possibly failure of the wire rope.

The microswitch located on the boom head needs to be adjusted in either of the following conditions.

- When the traveling block compresses the wire cage and it comes in contact with the boom head and all the crane functions continue to operate.
- When the block is not in contact with the wire cage and/or boom head and all crane functions fail to operate except rotation, boom in, and hoist line out.

The following is the proper procedure:

1. Make sure that the wire cage has not been damaged by being bent out of shape. The microswitch should be aligned with the small strike plate on the wire cage. The wire cage should be centered with the boom head as viewed from the end and hang down with approximately 3/4” to 1” space below. If it is not, it may be reshaped by carefully bending by hand. Otherwise a new wire cage may be required.
2. If the wire cage is in good condition or has been replaced or straightened, the two socket head screws on the microswitch housing should be loosened and the switch positioned so that it has a gap, with the thickness of a credit card or less between it and the small strike plate on the wire cage. Then tighten the two microswitch housing screws.
3. Test the microswitch function by either booming out or hoisting up until the traveling block comes in contact with the wire cage. After contact with the wire cage, but before the block hits the bottom head, all functions except rotation, boom in, and hoist down should fail to operate. Now boom in or hoist line out and all functions should again operate.

LOAD SENSOR CALIBRATION (ALL MODELS)

Your RKI crane is equipped with a torque reading load sensor, which prevents overloading. If the crane's load capacity is exceeded, the load sensor deactivates all winch functions except rotation, boom in, and hoist down. Remove the load from the crane and the overload sensor is **AUTOMATICALLY** reset, returning full function to the crane. If the load sensor gets out of adjustment, see instructions for its recalibration below.

Occasionally it may be necessary to recalibrate the load-sensing device.

The following is the proper procedure:

1. The load-sensing device is located in the upper right-hand section of the crane turret housing. It consists of a microswitch fastened to a bracket, which in turn is secured to an upright bar welded into the crane turret.
2. The plunger on the microswitch may be adjusted by means of the adjacent set screw.
3. Loosen the nut securing the set screw to the bar across the back of the turret.
4. Adjust the boom elevation and extension until the centerline of hook is at a position exactly 3 feet from the center of rotation, then connect a dynamometer (scale).
5. Raise the hook by operating the "hoist up" switch on the control handle until the dynamometer reads 3,200 lbs.
6. If you do not have a dynamometer please see the note below.
7. Adjust the set screw so that it rests against the end of the plunger. Turning the setscrew counterclockwise increases the load capacity while turning it clockwise decreases capacity.
8. Relieve the pull on the winch line by operating the "hoist down" switch on the control handle until the dynamometer reads 0 (zero) lbs.
9. Again, follow the procedure in #6. When the pull reads 3,200 lbs. the load sensor should stop the winch.
10. If the load sensor engages at the proper pull it is set correctly and the nut securing the set screw should be tightened.
11. If the load sensor does not engage properly follow the procedure in #6 until the proper setting is attained.

*** NOTE:** If a dynamometer is not available, the same results can be obtained by using a known weight (3,200 lbs.) and a known radius (3 feet). Another example would be 2,000 lbs. @ 5 ft.

SPARE PARTS

It is recommended that repair parts for your crane be obtained from your local RKI distributor. Please note that unauthorized servicing or alteration of your crane will void the warranty.

Each crane is assigned a serial number, which is a nameplate located near the bottom of the rear cover. The serial number can also be found in the owner's manual that is provided with the crane.

Please record your serial number and retain a copy of your invoice for future reference. If your crane should need service, this information will be required.

Below is a list of miscellaneous parts not previously listed in this manual:

Part Description	Part Number	Comment
Bronze Bushing	40005	Main boom pivots
Cord Reel Package	44193	Includes cord reel, micro switches, cable, and hardware
Counterbalance Valve	44344	Hydraulic cylinder C.B. valve (same for both cylinders)
Decal Kit	44357	Includes all decals for crane
Dipstick	44727	Oil Reservoir
Dust Cap	43507	Cover remote socket, with chain
Manifold (ERX model)	45177	Hydraulic manifold only for ERX model
Manifold (ER model)	45194	Hydraulic manifold only for ER model
Motor-Hydraulic Pump	45015	Motor only of 43802
Motor-Winch	44516	Motor only, 2 post
Oil Filter	45191	Spin-On, 10 micron
Oil Reservoir	44998	Reservoir only, includes o-ring and breather
#2 SAE Plug	45181	O-Ring Plug for hydraulic manifold
Seal Kit-Boom In/Out Cylinder	45159	Seal kit for 43708 extension cylinder
Seal Kit-Boom Up/Down Cylinder	45160	Seal kit for 43715 elevation cylinder
Socket-Remote	43391	Socket only of wiring harness in turret
Solenoid-Hydraulic Pump	45004	Starter solenoid only of 43802 pump
Terminal Boot	41376	Rubber Cap for winch motor terminals
Valve-Hydraulic Solenoid	45178	Cartridge valve only for manifold
#2 SAE Plug	45181	O-Ring Plug for hydraulic manifold

TROUBLESHOOTING

Problem	Solution
Crane slowly stops while lifting	Check for weak battery or bad connections
Cranes only operable functions are rotation, boom in, or hoist down	Overload sensor may be set off. Lower load to ground and switch will automatically reset. If power boom is extended, check the boom head to determine if wire cage is in contact with microswitch. If there is contact, all functions can be returned by either hoisting down or retracting the boom in.
Load sensor gets out of adjustment	See instructions to recalibrate in this manual.
Microswitch gets out of adjustment	See instructions for traveling block microswitch resetting.
Crane will not lift load	Load may exceed crane capacity. Refer to the load chart. You may need to reposition the truck closer to the load. Check microswitches (in turret and at the end of the boom) by pressing the point on the microswitch. If it does not click, replace the microswitch.
Remote Control will not operate	Check for any loose, exposed or frayed wires. Make sure the switches return freely to the center position and are not sticking or loose. Inspect the plug pins for damage.
Sporadic Functions	Check the hot cable connections from the power source to the crane. (This includes the quick disconnect and the connection to the brass rod in the crane.) Check for proper ground with good clean metal to metal connections (no paint, etc.). With the truck engine running, check the power source to confirm the crane is receiving 13 volts for proper operations. A replacement battery, alternator or adding an additional battery may be necessary.

Always provide the serial number of the crane when contacting RKI for further troubleshooting questions (stamped in the nameplate located near bottom of rear cover).

RKI LIFETIME WARRANTY

This warranty applies to anything we have manufactured.

The warranty applies to the original owner of the product for as long as he or she owns the product.

If something goes wrong which we determine was our fault we will repair or replace your product. The warranty doesn't apply to normal wear and tear.

Be sure to call your local distributor if you have a problem. We need the opportunity to talk to you about it. We may ask you to email us pictures or ship the product back to us for inspection.

Parts that we use but don't manufacture are covered to the extent of the warranty we get from the company that does manufacture them.

No loss of use coverage. No freight coverage. Repairs have to be authorized by us, in writing, in advance. No coverage if the product has been changed in any way.

To qualify for warranty the product must have been treated with respect in regard to normal installation, maintenance, and usage.

Accidents and acts of God aren't covered.

This warranty will be in effect until we decide to change it.